BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO.114 OF 2020

IN THE MATTER OF:

SECRETARY, ST. MARK EDUCATIONAL INSTITUTION SOCIETY GROUP OF INSTITUTION .... APPLICANT

VERSUS

THE ANDHRA PRADESH POLLUTION CONTROL BOARD &OTHERS ....

RESPONDENTS

INDEX

MBS Shankara Rao
Environmental Engineer
A.P Pollution Control Board,
Regional Office :
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Revenue Ward No. 6, Ram Nagar,
ANANTHAPURAMU - 515 004.
Phone No. : 08554-226066

ACTION TAKEN REPORT OF A.P POLLUTION CONTROL BOARD (APPCB) SUBMITTED IN COMPLIANCE TO THE HON'BLE NATIONAL GREEN TRIBUNAL (PB) ORDER DATED 09.09.2021 IN ORIGINAL APPLICATION NO. 114 OF 2020.

It is to submit that an Original Application No. 114 of 2020 was filed before the Hon'ble National Green Tribunal (PB), New Delhi by Secretary, St. Mark Educational Institution, Society Group of Institution, Ananthapuramu against alleged violation of Environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District. The Hon'ble NGT has heard the matter on 09.09.2021 and directed the APPCB *"Let a further action taken report and status of compliance as on November 30,2021 be ascertained and remedial action taken by the State PCB in exercise of its statutory powers, following due process of law. The State PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health"*. A copy of the Hon'ble NGT order dated 09.09.2021 is enclosed as **Annexure – 1.**

In compliance to the above order, the action taken report of APPCB is submitted below:

1) The APPCB vide letter dated 18.10.2021 requested the Indian Institute of Chemical Technology (IICT), Hyderabad and Department of Chemical Engineering, JNTU, Ananthapuramu, etc., to identify the sources of odour and to suggest the state-of-art odour control systems required to be provided by the industry as per the orders of Hon'ble NGT order dated 09.09.2021. A copies of the letters dated 18.10.2021 are enclosed as **Annexure – 2A & 2B.**

2) On the request of the APPCB, the following officials of Indian Institute of Chemical Technology (IICT), Hyderabad and Department of Chemical Engineering, Jawaharlal Nehru Technological University (JNTU), Anantapuramu visited the M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District and surrounding area on November 09, 2021 to identify the sources of odour from the industry and also to suggest measures for odour control from the industry.

Indian Institute of Chemical Technology (IICT), Hyderabad	**Jawaharlal Nehru Technological University (JNTU), Anantapuramu**
Dr. A. Gangagni Rao Chief Scientist Council of Scientific and Industrial Research (CSIR) Indian Institute of Chemical Technology (IICT), Hyderabad	Prof. S.V. Satyanarayana Professor Department of Chemical Engineering Jawaharlal Nehru Technological University, Anantapuramu
Dr. S. VenkataMohan Sr. Pr. Scientist Council of Scientific and Industrial Research (CSIR) Indian Institute of Chemical Technology (IICT), Hyderabad	

3) The Expert Team have a detailed discussion regarding products manufactured, raw materials used, details of the reactions carried out, material and water balance for each of the products, facilities available in the industry including solvent distillation columns and effluent

treatment plants, control systems provided by the industry for odour control from the process, solvent distillation columns and Effluent Treatment Plant (ETP).

4) The above experts from IICT, Hyderabad and JNTU, Ananthapuramu has suggested the following 11 Nos.of state-of-art odour control systems to M/s. Siflon Drugs to further control odour from the industry:

   i) shall provide common adsorption column for the scrubbers provided in Production Block – B & C and the vents from the two scrubbers (water and caustic) shall be connected to the common adsorption column system with granular activated carbon specific to gaseous adsorption.

   ii) shall provide proper connections without bypassing of adsorption column provided for the vent of the teriatory condenser provided for the solvent distillation column.

   iii) shall connect the vent of the mother liquor storage tank (day tank) to the adsorption column and shall use the granulated activated carbon in the adsorption column to increase the efficiency of the adsorption.

   iv) The sampling solutions from the solvent distillation columns should be collected in a closed container and shall be transferred to the Mother Liquor (ML) storage tank by gravity in a closed loop.

   v) shall provide proper railing in all stairs of distillation facility in order to avoid any accidents.

   vi) shall use cold water by adding ice blocks in the Cooling tower provided for the vent condenser of solvent storage tanks and to observe the inlet and outlet temperature by providing the thermometer.

   vii) shall pass the vent of the scrubber provided for the Agitated Thin Film Drier (ATFD) outlet through appropriately designed activated carbon adsorption system.

   viii) shall completely cover the Equalizing tanks (for both high and low TDS effluents) and biological treatment systems (aeration tanks) with powder coated sheets and the vents of the tanks shall be connected to scrubbing system.

   ix) shall segregate the Sulphur powder bags in raw material warehouse and to store them in a separate closed room or enclosure with proper exhaust arrangement connected to scrubbing system.

   x) shall frequently check for leakages in gaskets of all the flange joints and replace accordingly.

   xi) shall provide appropriate clamps to the metal pipes connected with HDPE tubing for avoiding leakages.

5) The IICT, Hyderabad vide letter dated 12.10.2021 communicated the detailed report of the expert committee to APPCB. A copy of the report of expert committee is enclosed as **Annexure – 3.**

6) The APPCB, Regional Office, Ananthapuramu vide Order dated 16.11.2021 communicated the report of the expert committee of IICT, Hyderabad to M/s. Siflon Drugs and directed the industry to implement the recommendations of the expert committee within 3 weeks and to

implement any other additional measures necessary to control odour and to ensure recover of solvents not less than 95%. A copy of the same is enclosed as **Annexure – 4.**

7) M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District was inspected by Sri M.V.N. Prasad, SEE, Zonal Office, Kurnool; Sri M.Bujjibabu JSO, Zonal Office, Kurnool and Sri MBS Shankara Rao, EE, RO, Ananthapuramu on 07.12.2021 and 08.12.2021 to verify the status of compliance of the industry. The inspection team have submitted the report on 14.12.2021 to APPCB, Board Office, Vijayawada for taking further necessary action. A copy of the inspection report is enclosed as **Annexure- 5.**

8) During inspection, the inspection team have also verified the compliance of the industry to the state-of-art odour control systems suggested by IICT, Hyderabad and the latest status of the industry is as follows:

S.No	Additional state-of-art odour control systems suggested by expert team	Compliance
1.	Shall provide common adsorption column for the scrubbers provided in production block – B & C and the vents from the two scrubbers (water and caustic) shall be connected to the common adsorption column system with granular activated carbon specific to gaseous adsorption	Complied. The industry has provided candy filter with granulated carbon adsorption system for the vents of the Scrubbers provided at production Blocks.
2.	Shall provide proper connections without bypassing of adsorption columnprovided for the vent of the tertiary condenser provided for the solvent distillation column.	The industry has provided candy filter with granular activated carbon adsorption system for the ventsof the condenser provided for the two solvent distillation columns.
3.	Shall connect the vent of the mother liquor storage tank (day tank) to the adsorption column and shall use the granulated activated carbon in the adsorption column to increase the efficiency of the adsorption.	The industry has connected the condenser vent of mother liquor storage tanks (day tank) to the candy filter with granular carbon adsorption system.
4.	The sampling solutions from the solvent distillation columns should be collected in a closed container and shall be transferred to the ML storage tank by gravity in a closed loop.	The industry has provided 100 Liters of closed collection tank for collection of sampling solution for each of the two distillation columns.
5.	Shall provide proper railing in all stairs of distillation facility in order to avoid any accidents.	The industry has provided railing in all stairs of the distillation column.
6.	Shall use cold water by adding ice blocks in the Cooling tower provided for the vent condenser of solvent storage tanks and also to observe the inlet and outlet temperature by providing the thermometer.	Not Complied. During inspection, it was observed that the industry was in process of installation of separate cooling tower of capacity 50 TR for the condensers provided to the solvent storage tanks. The industry has to install temperature indicators for the cooling tower for recording inlet and outlet temperatures.
7.	Shall pass the vent of the scrubber provided for the ATFD outlet through appropriately designed activated carbon adsorption system.	Complied. The industry has provided candy filter with granular carbon adsorption for the vent of ATFD scrubber outlet.

8.	Shall completely cover the Equalizing tanks (for both high and low TDS effluents) and biological treatment systems (aeration tanks) with powder coated sheets and the vents of the tanks shall be connected to scrubbing system.	Complied. The industry has covered Equalizing tanks (for both high and low TDS effluents) and also aeration tanks of the biological ETP with powder coated sheets. The industry has provided suction hood (with ID fan of capacity 5 HP) for HTDS & LTDS Equalizing tanks and connected to scrubber. The vent of the scrubber is provided with candy filter with granular carbon adsorption system. The industry has provided suction hood (with ID fan of capacity – 5 HP) for the aeration tanks of biological ETP. The industry has provided scrubber for the aeration tank and vent of the scrubber is provided with candy filter granulated carbon adsorption system.
9.	Shall segregate the Sulphur powder bags in raw material warehouse and to store them in a separate closed room or enclosure with proper exhaust arrangement connected to scrubbing system.	Partially complied. The industry has provided separate room for the storage of Sulphur powder bags. The industry has to provide exhaust arrangement connected to scrubbing system.
10.	Shall frequently check for leakages in gaskets of all the flange joints and replace accordingly.	The unit is regularly checking the leakages of all the flange joints.
11.	Shall provide appropriate clamps to the metal pipes connected with HDPE tubing for avoiding leakages.	The industry has replaced the HDPE pipe with MS pipe at Solvent storage tank area and the industry has to replace the HDPE pipes with MS pipes at Effluent Treatment area to avoid leakages. The photographs depicating the implementation of recommendations of expert committee is enclosed as **Annexure – 6.**

9) The industry has implemented 9 of the state-of-art odour control system recommended by expert team of IICT, Hyderabad and JNTU, Ananthapuramu and has to implement the other 2 recommendations of the expert team i.e., providing of separate cooling tower for the condensers of solvent storage tanks and providing exhaust arrangement connected to scrubbing system for the sulphur storage room.

10) During inspection, the solvent losses from the recovery systems was observed to be in the range of 4.1 to 5.9 % during the period from Aug, 21 to Nov, 21. There is a reduction in solvent losses from 5.02 - 7.15 % (which was reported for the period from Mar, 2021 to Jun, 2021) to 4.1 to 5.9 % (during the period from Aug, 2021 to Nov, 2021).

11) From the VOC monitoring conducted by the Board Officials within industry's premises, in the nearby villages and in the Complainant's premises, it was observed that the VOC's were recorded Below the Detectable Levels (BDL) in the nearby villages and also in the complainant's premises. However, the VOC's were recorded in the industry's premises in the range of 0.15 to 3.95 PPM which may be due to the solvent losses.

12) The Board earlier levied Environmental Compensation of Rs. 2.4 Lakhs for the period from 23.05.2020 to 16.06.2020 and also Rs. 32.90 Lakhs for the period from 25.07.2020 to 19.06.2021 and industry was under Stop Production from 17.06.2020 to 24.07.2020. The industry has paid Compensation levied by the Board.

13) Also, as per the directions of the Hon'ble NGT vide Order dated 09.09.2021, the A.P. Pollution Control Board (APPCB) relooked into the issue of Environmental Compensation and noted that violations were observed from 16.11.2011 as reflected in the directions issued on 13.12.2011 (based on the inspection on 16.11.2021) and also on 02.04.2017 (based on the inspection on 18.02.2017) and proposed Environmental Compensation of Rs. 3,11,00,000/- for the additional violation period from 16.11.2011 to 22.05.2020.

14) The A.P. Pollution Control Board vide Order dated 31.12.2021 issued the following directions to the industry and directed to file the objections on the directions if any within 15 days' time to the Board:

i) The industry shall pay the Environmental Compensation of Rs. 3,11,00,000/- for additional violation period from 16.11.2011 to 22.05.2020.

ii) The industry shall not manufacture any un-consented products and shall not exceed the production quantities permitted.

iii) The industry shall segregate the Sulphur powder bags in raw material warehouse and to store them in a separate closed room or enclosure with proper exhaust arrangement connected to scrubbing system.

iv) The industry shall use cold water by adding ice blocks in the Cooling tower provided for the vent condenser of solvent storage tanks and also to observe the inlet and outlet temperature by providing the thermometer.

v) The industry shall evaluate the odour control measures undertaken and to take additional measures needed to further minimize odour nuisance.

vi) The industry shall ensure continuous operation of ZLD System and ensure effective operation of Air Pollution Control Systems including Scrubbing Systems.

A Copy of the APPCB Order dated 31.12.2021 is enclosed as **Annexure – 7.**

The action taken report is submitted to the Hon'ble National Green Tribunal in due compliance of the directions issued by the Hon'ble Tribunal. APPCB will abide by all such directions as this Hon'ble Tribunal may deem fit and appropriate.

Dated at Ananthapuramu, Andhra Pradesh on this 31st day of December, 2021.

MBS Shankara Rao
Environmental Engineer
A.P Pollution Control Board,
Regional Office :
D. No. 6-3-145, 1st Floor,
Revenue Ward No. 6, Ram Nagar,
ANANTHAPURAMU - 515 004.
Phone No. : 08554-226066

Item No. 03 (Court No. 1)

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 114/2020

(With report dated 02.09.2021)

Secretary, St. Mark Educational Institution
Society Group of Institution Applicant

Versus

State of Andhra Pradesh Respondent

Date of hearing: 09.09.2021

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Respondent: Mr. TVS Raghavendra Sreyas, Advocate for AP PCB

ORDER

1. Question for consideration is violation of environmental norms by M/s Siflon Drugs at Ranchanpalli, District Anantapur, Andhra Pradesh. Vide order dated 14.10.2020 in OA 114/2020, the Tribunal directed remedial action by the State PCB and District Magistrate, Anantapur and filing of an action taken report.

2. The matter was thereafter considered on 03.03.2021 in the light of report of the State PCB dated 23.02.2021 after inspection by the joint Committee finding continued violation of environmental norms and recommending further steps by the industry particularly with regard to control of odour adversely affecting public health and environment. The operative part of the order is reproduced below:

"1. xxx ……xxx ……xxx
2. Accordingly, a common action taken report has been filed by the State PCB on 23.02.2021 to the effect that a joint Committee was constituted which carried out inspection with reference to nature of the industrial activity, details of water consumption, nature and extent of production, details of effluent generation, details of sources of air pollution, control equipment provided by the industry, details of the process emissions and control equipment provided, effluent treatment details, Hazardous & Non–Hazardous Solid waste details, details of the Environmental Clearance and details of Consent for Operation from A.P. Pollution Control Board. …..

xxx ……xxx ……xxx

5. In the light of above conclusion, there is need to ensure compliance of environmental norms as well as to assess and recovery of compensation for the past violations, following due process of law. In particular, remedial action be taken to control odour by utilising latest technology for the purpose.

6. Learned Counsel appearing for the State PCB has assured that within four weeks remedial action will be ensured and compensation will be assessed and recovered.

7. Accordingly, let an action taken report be filed within two months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF with a copy to the concerned unit for its response, if any, before the next date."

3. In pursuance of above, the State PCB has filed further report on 02.09.2021 after inspections on 04.03.2021 and 05.03.2021 to ascertain the status of compliance. The State PCB issued directions on 18.05.2021 for compliance followed by further inspection on 18.06.2021 and 19.06.2021 and show cause notice dated 01.07.2021, the order dated 10.08.2021. The relevant extracts from the report are:

"*xxx……xxx ……xxx*

12. The APPCB, Zonal Laboratory, Kurnool have conducted stack monitoring for the stack attached to boiler, vent of the scrubber and also Ambient Air Quality & VOC Monitoring within industry's premises, nearby villages and also in the complainant's premises in March, 2021 i.e., on 04.03.2021 & 05.03.2021 and also in June, 2021 i.e., on 18.06.2021 & 19.06.2021.

i. Inferences from the monitorings conducted by APPCB on 04.03.2021 &05.03.2021:

a) The Volatile Organic Compounds (VOCs) monitored within the industry premises show that the VOC values were in the range of 0.1 PPM to 2.8 PPM ***indicating that the characteristic odour nuisance prevailed within the premises****.*

b) The VOCs monitored in the nearby villages viz., Kodimi and Rachanapalli which are at an aerial distance of 0.9 KM and 1.9 KM respectively from the industry, ***show that the VOCs were below detectable limits.***

c) The VOCs monitored in the premises of Chiranjeevi Reddy Institute of Engineering & Technology (CRIT)(belonging to the Petitioner), Rachanapalli (V) at an aerial distance of 0.7 Km from the industry, show the values in the range of 0.1 PPM to 0.2 PPM during night hours from 10:20 PM to 2:30 AM on 4-5th March 2021.

d) The stack & ambient air quality monitoring conducted within the industry shows that the parameters viz., SPM, SO_2 and NO_x are within the stipulated standards. The copies of the anlaysis reports are enclosed as Annexure – 3.

ii. Inferences from the monitoring conducted by APPCB on 18.06.2021 & 19.06.2021:

a) The Stack and Ambient Air Quality Monitoring conducted within the industry's premises shows that the parameters viz., SPM, SO_2 and NO_x are within the stipulated standards.

b) The VOCs monitored within the industry premises show that the VOC values were in the range of 0.1 PPM to 4.4 PPM indicating that the characteristic odour of organic compounds in the industry's premises, which may be due to the solvent losses. The industry has to further reduce solvent losses by improving the efficiency of the solvent recovery systems.

c) The VOCs monitored in the nearby villages viz., Kodimi and Rachanapalli which are at an aerial distance of 0.9 KM and 1.9 KM respectively from the industry, show that the VOCs were within the Below Detectable Limit of 0.1 PPM

d) The VOCs monitored in the premises of CRIT College, Rachanapalli (Complainant premises) at an aerial distance of 0.7 Km from the industry, show that the VOCs were within the Below Detectable Limit of 0.1 PPM. The copies of the analysis reports are enclosed as Annexure – 4

8 to 10. xxx …… xxx …… xxx

11. The latest compliance of the industry to the directions issued by the Board vide Order dated 18.05.2021 are as follows:

S. No.	***Direction***	***Compliance***

1.	*The industry shall take all the necessary steps to reduce the odour nuisance within one month*	*The industry has upgraded the receivers used for the Scrubber with the jacketed receivers with water circulation to control the temperature of the Scrubbing media thereby increase the Scrubbing efficiency.* *Also, the industry has provided i) Scrubber to the vent of the Agitated Thin Film Drier provided for disposal of HTDS effluents and ii) Covered the HTDS effluent storage tanks and provided the ducting system (with ID fan of capacity 5 HP) connected to Scrubber to control odour nuisance from the High TDS effluent storage tanks.* *The industry is also operating MEE and ATFD only during day time to control the odour from the evaporation system.*
2	*The industry shall provide separate stacks for the 4 TPH and 3 TPH boilers as stipulated in the CFO order dt. 21.06.2018 within one month*	*Earlier, the industry is having Common Stack for the 3 TPH & 4 TPH boilers. Now, the industry is not operating the 3 TPH boiler and also disconnected the duct from 3 TPH boiler to the common stack permanently on 01.06.2021.* *The industry representative informed that they are planning to sell the 3 TPH boiler within a month's time.*
3	*The industry shall not manufacture new products and not exceeding the permitted quantity, other than those mentioned in CFO*	*The industry is not manufacturing any new products other than permitted in the Consent Order. Also, after the issue of Show cause notice dt.01.07.2021 by the Board for payment of Environmental Compensation for excess production, the industry has stopped carrying out of excess production.* *Out of the 9 products permitted in the CFO order dt.21.06.2018, the industry has manufactured 3 products namely Oxyclozanide, Niclosamide & Fenbendazole and has carried out production in total (which include all the 3 products) of about 16,500 Kgs i.e., 271.31 Kgs/day (Average) as against the consented quantity of 660 Kgs/Day during the period from 20.06.2021 to 20.08.2021. The industry has manufactured Oxyclozanide – 10,000 Kgs i.e., 163.93 Kgs/day (Average) as against permitted quantity of 166.67 Kgs/day;*

		Niclosamide – 4,500 Kgs i.e., 73.77 Kgs/day (Average) as against permitted quantity of 70 Kgs/day & Fenbendazole – 2,050 Kgs i.e., 33.6 Kgs/day (Average) as against permitted quantity of 33.33 Kgs/day during the above period.
4	*The industry shall dispose the Plastic liners, carboys and scrap waste only to the authorized recyclers*	*The industry is disposing the plastic liners, carboys and scrap waste regularly to M/s. Apex polymers, Visakhapatnam which is an authorized recycler.*
5	*The industry shall operate the two stage scrubbers for scrubbing of process emissions at all emission sources. The industry shall maintain online pH meters to the scrubbers*	*The industry is operating two stage scrubbers for the scrubbing of process emissions i.e., HCl & SO2 emissions emanated from the production Block –B & C. The industry has provided online pH meters for the scrubbers provided in Block - B & Block – C to monitor the scrubbing efficiency and these pH meters are provided with data logger system.*
6	*There shall not be any discharge of wastewater outside the industry premises*	*There is no discharge of wastewater outside the industry premises.*
7	*The online monitoring system shall be calibrated periodically as per equipment supplier's manual/CPCB guidelines before starting the production.*	*The industry has provided online effluent monitoring system for the outlet of RO for monitoring pH, BOD, COD and TSS. The industry has calibrated the online monitoring system on 15.03.2021 and the next due date for calibration of the system is on 15.09.2021.* *A copy of the calibration certificate is enclosed as Annexure-9.*

12. The industry utilizes solvents namely Tolune, Methanol, Mono Chloro Benzene, Acetone and n-hexane and is recovering the solvents using simple distillation/distillation columns. During inspection, the solvent losses from the recovery systems was found to be in the range of 5.02 to 7.15 %. The industry has to take further measures to achieve more than 95% recovery for the solvents in the distillation/recovery process to control the odour nuisance in the premises.

13. From the VOC monitoring conducted by the Board Officials within industry's premises, in the nearby villages and in the Complainant's premises, it was observed that the VOC's were recorded Below the Detectable Levels (BDL) in the nearby villages and also in the complainant's premises. However, the VOC's were recorded in the industry's premises in the range of 0.1 to 2.8 PPM (during monitoring on 04.03.2021 & 05.03.202) and 0.1 to 4.4 PPM (during monitoring on 18.06.2021 & 19.06.2021) which is due to the

solvent losses. The industry has to further reduce solvent losses by improving the efficiency of the solvent recovery systems.

14. The APPCB has reviewed the status of the industry before the External Advisory Committee (Task Force) meeting held on 22.07.2021 and issued directions to the industry vide order dt.10.08.2021 to continue to take all necessary steps to reduce the odour nuisance along with other conditions to comply with."

4. We have considered the matter with the assistance of the learned Counsel for the State PCB.

5. It is clear from the above that all necessary steps to reduce odour nuisance due to the solvent losses have not been taken inspite of direction of the State PCB. While some other steps have been taken, it is necessary to take further steps and also to verify that the violations have actually stopped. As recommended in the report, the industry has yet to take measures for achieving more than 95% recovery of the solvents in the distillation/recovery process to control odour nuisance in the premises. The industry needs to enhance solvent recovery and maintain Work Zone Standards. Standards for channelised VOC emissions may be achieved. The industry may operate with duly approved On and off - site emergency plans under MSIHC Rules, 1989. SPCB may apply the SoP for spent solvent recovery with such conditions as may be necessary for protection of environment and public health.

6. We also find that though compensation has been assessed for the past violations, the commencement of violation has been counted only from the date of inspection without recording any finding that prior to the said date such violation did not exist. As per common course of events once an inspection is found there is a presumption that the same was continuing unless shown otherwise. This aspect may also be looked into by the State PCB. Let a further action taken report and status of

compliance as on November 30, 2021 be ascertained and remedial action taken by the State PCB in exercise of its statutory powers, following due process of law. The State PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health.

7. A further action taken report may be filed on or before December 15, 2021 by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.

List for further consideration on 07.01.2022.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Brijesh Sethi, JM

Dr. Nagin Nanda, EM

September 09, 2021
Original Application No. 114/2020
DV

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL OFFICE: KURNOOL
1st Floor, Shankar Shopping Complex, Krishna Nagar Main Road, Kurnool – 518 002.

Phone: 08518-233619
Email: zoknl-jcee@appcb.gov.in

Lr.No. ATP-50/PCB/ZO-KNL/2021 – 261 **Date:** 18 **-10-2021**

To
The Director,
Indian Institute of Chemical Technology (IICT),
Uppal Rd, IICT Colony, Tarnaka, Hyderabad, Telangana – 500007
E-mail: director@iict.res.in.
Phone No. +91-40-27193482

Sir,

Sub:- APPCB- Zonal Office, Kurnool – Orders of the Hon'ble NGT dated 03.03.2021 and 09.09.2021 in O.A.No.114 of 2020 with regard to violation of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu Rural (M), Ananthapuramu District –Proposals called from your esteemed organization for identifying the sources of odour and also to suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGT – Reg.

Ref:
1. Hon'ble NGT (PB) Order dated 14.10.2020 in O.A. Nos 114 of 2020.
2. Hon'ble NGT (PB) Order dated 03.03.2021in O.A. Nos 114 of 2020.
3. Hon'ble NGT (PB) Order dated 09.09.2021in O.A. Nos 114 of 2020.
4. E-Mail received from SEE, Legal Cell, Board Office, Vijayawada on 13.09.2021.

* * * * *

1) It is to submit that an Original Application No.114 of 2020 was filed by Secretary, St. Mark Educational Institution, Society Group of Institution, Ananthapuramu regarding violations of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District.
2) The matter was heard by the Hon'ble NGT on 03.03.2021 and the Hon'ble NGT vide order dated 03.03.2021 directed*that "there is need to ensure compliance of environmental norms as well as to assess and recovery of compensation for the past violations, following due process of law. In particular,* ***remedial action be taken to control odour by utilizing latest technology for the purpose".***
3) The Hon'ble NGT has heard the matter again on 09.09.2021 and observed that i) all necessary steps to reduce odour nuisance due to the solvent losses have not been taken by the industry ii) yet to take measures for achieving more than 95% recovery of the solvents, iii) needs to enhance solvent recovery and maintain Work Zone Standards, iv) the industry may operate with duly approved on and off-site emergency plans under MSIHC Rules, 1989 and Board to apply the SOP for spent solvent recovery.

4) The Hon'ble NGT has also directed that ***"The state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health".***The Hon'ble NGT directed the Board to submit the action taken report in the matter on or before 15.12.2021.

In this regard, it is proposed to engage your esteemed organization for identifying the sources of odour and alsoto suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGTdated.09.09.2021. A copy of the Hon'ble NGT order dt.09.09.2021 is herewith enclosed for ready reference.

Hence, it is requested to send the proposals for the above mentioned at the earliest.

Yours faithfully,

JOINT CHIEF ENVIRONMENTAL ENGINEER(FAC)

Encl: a/a

Copy submitted to the JCEE (Unit - II) Board Office, Vijayawada for favour of information and necessary action.

Copy submitted to the SEE (Legal cell), BO, Vijayawada for favour of information and necessary action.

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL OFFICE: KURNOOL
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Lr.No. ATP-50/PCB/ZO-KNL/2021 – 261 **Date:** 18 **-10-2021**

To
Prof. S.V.Satyanarayana,
Department of Chemical Engineering
Jawaharlal Nehru Technological University,
Anantapuram - 515 002.
E-mail:svsatya7@gmail.com, svsatya7.chemengg@jntua.ac.in, de@jntua.ac.in
Mobile : 091-9000551419 (O); 9849509167 (P)

Sir,

Sub:- APPCB - Zonal Office, Kurnool – Orders of the Hon'ble NGT dated 03.03.2021 and 09.09.2021 in O.A.No.114 of 2020 with regard to violation of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu Rural (M), Ananthapuramu District – Proposals called from your esteemed organization for identifying the sources of odour and also to suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGT – Reg.

Ref: 1. Hon'ble NGT (PB) Order dated 14.10.2020 in O.A. Nos 114 of 2020.
2. Hon'ble NGT (PB) Order dated 03.03.2021in O.A. Nos 114 of 2020.
3. Hon'ble NGT (PB) Order dated 09.09.2021in O.A. Nos 114 of 2020.
4. E-Mail received from SEE, Legal Cell, Board Office, Vijayawada on 13.09.2021.

* * * * *

1) It is to submit that an Original Application No.114 of 2020 was filed by Secretary, St. Mark Educational Institution, Society Group of Institution, Ananthapuramu regarding violations of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District.
2) The matter was heard by the Hon'ble NGT on 03.03.2021 and the Hon'ble NGT vide order dated 03.03.2021 directed *that "there is need to ensure compliance of environmental norms as well as to assess and recovery of compensation for the past violations, following due process of law. In particular,* ***remedial action be taken to control odour by utilizing latest technology for the purpose".***
3) The Hon'ble NGT has heard the matter again on 09.09.2021 and observed that i) all necessary steps to reduce odour nuisance due to the solvent losses have not been taken by the industry ii) yet to take measures for achieving more than 95% recovery of the solvents, iii) needs to enhance solvent recovery and maintain Work Zone Standards, iv) the industry

may operate with duly approved on and off-site emergency plans under MSIHC Rules, 1989 and Board to apply the SOP for spent solvent recovery.

4) The Hon'ble NGT has also directed that ***"The state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health"***. The Hon'ble NGT directed the Board to submit the action taken report in the matter on or before 15.12.2021.

In this regard, it is proposed to engage your esteemed organization for identifying the sources of odour and also to suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGT dated.09.09.2021. A copy of the Hon'ble NGT order dt.09.09.2021 is herewith enclosed for ready reference.

Hence, it is requested to send the proposals for the above mentioned at the earliest.

Yours faithfully,

JOINT CHIEF ENVIRONMENTAL ENGINEER(FAC)

Encl: a/a

Copy submitted to the JCEE (Unit - II) Board Office, Vijayawada for favour of information and necessary action.

Copy submitted to the SEE (Legal cell), BO, Vijayawada for favour of information and necessary action.

सी.एस.आइ.आर - भारतीय रासायनिक प्रौद्योगिकी संस्थान
CSIR - Indian Institute of Chemical Technology
(वैज्ञानिक तथा औघोगिक अनुसंधान परिषद)
(Council of Scientific & Industrial Research)
(विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार / Ministry of Science & Technology, Govt. of India)
तारनाका Tarnaka, हैदराबाद Hyderabad - 500 007, तेलंगाना Telangana State, भारत India

CSIR - IICT
Touching Lives

Dr. A. Gangagni Rao, FIE (India), FRSC (London)
Chief Scientist and Professor in AcSIR
Chairperson, Human Resource Management Committee (HRMC)
Bioengineering and Environmental Sciences Group (BEES)
Department of Energy and Environmental Engineering (DEEE)

डॉ. ए. गंगाग्नि राव, एफआईई(भारत) एफआरएससी (लंडन)
मुखय्य वैज्ञानिक एवं प्रोफेसर, एसीएसआईआर
अध्यक्ष, मानव संसाधन प्रबंधन समिति (एचआरएमसी)
जैव अभियांत्रिकी एवं पर्यावरणीय विज्ञान (बीईईएस)
ऊर्जा एवं पर्यावरण अभियंत्रिकी विभाग (डीईईई)

12th November 2021

To,

The Joint Chief Environmental Engineer (FAC),

APPCB, Zonal Office, Kurnool.

Dear Sir,

Sub: APPCB – RO: ATP – Orders of the Hon'ble NGT dated 09.09.2021 in O.A. No. 114 of 2020 – Request of the APPCB to identify the sources of odour from M/s. Siflon Drugs and to suggest the state-of-art odour control systems required to be provided by the industry – Report – Submitted – Reg.

Ref: APPCB, Zonal Office, Kurnool Lr.No.ATP-50/PCB/ZO-KNL/2021-261, dated 18.10.2021.

* * * *

With reference to the above, I along with Dr. S. Venkata Mohan, Sr. Pr. Scientist Council of Scientific and Industrial Research (CSIR), Indian Institute of Chemical Technology (IICT), Hyderabad, and Prof. S.V. Satyanarayana, Professor, Department of Chemical Engineering Jawaharlal Nehru Technological University, Anantapuramu College of Engineering Ananthapuramu visited M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District on 09.11.2021 to identify the sources of odour from and to suggest the state-of-art odour control systems required to be provided by the industry. A copy of the detailed report is herewith enclosed for kind perusal.

(Dr. A. Gangagni Rao)

Chief Scientist, CSIR - IICT, Hyderabad

Tel : (O) +91-40-27191807, Cell: 9949010736, Fax : +91-40-27160387
Email: agrao@iict.res.in, agrao@csiriict.in / gangagnirao@gmail.com | Website : www.iictindia.org

REPORT OF THE EXPERTS OF INDIAN INSTITUTE OF CHEMICAL TECHNOLOGY, HYDERABAD AND JNTUA COLLEGE OF ENGINEERING, ANANTHAPURAMU TO M/s. SIFLON DRUGS, RACHANAPALLI (V), ANANTHAPURAMU ON 09.11.2021 FOR IDENTIFYING THE SOURCES OF ODOUR AND ALSO TO SUGGEST THE STATE OF ART ODOUR CONTROL SYSTEMS AS PER THE PROPOSAL OF APPCB DATED 18.10.2021 IN CONNECTION WITH THE DIRECTIONS OF HON'BLE NGT (PRINCIPAL BENCH), NEW DELHI VIDE ORDER DATED 09.09.2021 IN O.A. No. 114 OF 2020.

In the matter of Original Application No.114 of 2020 filed by Secretary, St. Mark Educational Institution, Society Group of Institution, Ananthapuramu regarding violations of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District, the Hon'ble NGT has passed an order dated September 09, 2021 directed that "*The state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health*". The A.P. Pollution Control Board vide letter dated October 18, 2021 requested the Indian Institute of Chemical Technology, Hyderabad and also Department of Chemical Engineering, Jawaharlal Nehru Technological University (JNTU), Anantapuramu to identify the sources odour and also to suggest state-of-art odour control system required to be provided by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District. A Copy of the Hon'ble NGT Order and APPCB request letter dated 18.10.2021 is attached as **Annexure – I & II.**

In connection with the request of the APPCB vide letter dated 18.10.2021, the following officials Indian Institute of Chemical Technology, Hyderabad and Department of Chemical Engineering, Jawaharlal Nehru Technological University (JNTU), Anantapur College of Engineering, Ananthapuramu visited M/s. Sflon Drugs, Rachanapalli (V), Ananthapuramu District and surrounding area on November 09, 2021 to identify the sources of odour from the industry and also to suggest measures for odour control from the industry.

Indian Institute of Chemical Technology (IICT), Hyderabad	**Jawaharlal Nehru Technological University (JNTU), Anantapuramu**
1. Dr. A. Gangagni Rao Chief Scientist Council of Scientific and Industrial Research (CSIR) Indian Institute of Chemical Technology (IICT), Hyderabad	2. Prof. S.V. Satyanarayana Professor Department of Chemical Engineering Jawaharlal Nehru Technological University, Anantapur College of Engineering, Ananthapuramu

3. Dr. S. Venkata Mohan Sr. Pr. Scientist Council of Scientific and Industrial Research (CSIR) Indian Institute of Chemical Technology (IICT), Hyderabad	

During the visit, it was observed that there is no odour while entering the plant site. The team had a detailed discussion with EE, APPCB, Regional Office, Ananthapuramu and also with Sri. S. Suresh Kumar, General Manager of the industry regarding products manufactured, raw materials used, details of the reactions carried out, material and water balance for each of the product, facilities available in the industry including the solvent distillation columns and effluent treatment plants, control systems provided by the industry for odour control from process, solvent distillation columns and Effluent Treatment Plant (ETP). The team noted that the M/s. Siflon Drugs, is manufacturing only 4 Nos.of products out of the 9 Nos.of permitted products and is manufacturing i) Oxyclozanide, ii) Niclosamide, iii) Fenbendazole and iv) Refoxanide. The committee was also noted that they have procuring the raw material for stage – 3 of Oxyclozanide (3, 5, 6 Trichloro Salicylic Acid) and also stage – 1 of Niclosamide (5 Chloro Salicylic Acid) in order to avoid usage of chlorine in the premises. The committee has thorough inspection of production blocks (B & C), Pharma block (D), raw material warehouse, distillation columns, solvent storage tanks, ETP provided for the low TDS effluents, stripper, MEE and ATFD provided for high TDS effluents.

The following are the identified sources of odour from the industry by the team and details are as follows:

A) Raw Material Warehouse:

The team inspected the Raw Material Warehouse facility provided for the storage of various chemicals used in the process. The pungent odour was observed from the raw material bags stored in the Raw Material Warehouse. The committee checked each and every raw material stored in the Raw Material Warehouse and noted that the pungent odour was due to storage of sulphur bags in the warehouse. The team suggested the unit representative to segregate the Sulphur powder bags and to store them in a closed room or enclosure with proper exhaust arrangement connected to scrubbing system in order to control the odour from the warehouse.

B) Production Block B, C & Pharma Block D:

The team noted that the unit is having 2 Nos. of production blocks (B & C) and 1 No. of Pharma block. The production block B is having 8 Nos. of reactors with a total capacity of 33 KL and is used for production of Fenbendazole and Rafoxanide products. The production block C is having 18 Nos. of reactors with a total capacity of 100 KL and is used for the production of Oxyclozanide and Niclosamide. From the process, in the stage – 3 of Oxyclozamide about 278 Kgs per batch of HCL and 420 Kgs per batch of SO_2 emissions are emanated (batch size 900 Kgs) and HCL of 36.5 Kgs per batch is emanated in stage-3 of Rafoxanide (batch size 500 Kgs) and also 73 Kgs per batch of HCL is emanated in Niclosamide (batch size 700 Kgs).

In order to control the odour from the process emissions, two stage scrubbing system (Water followed by Caustic Solution as Scrubbing media) is arranged to scrub the process emissions in each of the production blocks, Block-B and Block-C. Also, to increase the efficiency of the Scrubbers, the receivers used for the scrubbing media is arranged with jacketed facility with cooling water circulation through the jacket. The online pH monitoring mechanism with data logging system and alarm system is also provided to monitor the scrubbers provided in the production blocks.

In order to further strengthen the scrubbing system provided in the production blocks, the following additional measures may be considered for improving the efficiency of the scrubbing systems:

1. All the flange joints should be frequently checked for leakages in the gaskets and shall be replaced accordingly.

2. Wherever, metal pipes are connected with HDPE tubing, it should be ensured to provide appropriate clamps.

3. The industry shall provide common adsorption column for the scrubbers provided in production block – B & C and the vents from the two scrubbers (water and caustic) shall be connected to the common adsorption column system. Granular activated carbon specific to gaseous adsorption should be considered to increase the efficiency of the scrubbing.

C) Solvent Distillation Columns:

Two distillation columns used by the industry to recover Acetone and Methanol solvents which are used in the processes. The distillation columns are equipped with primary condensers having cooling water circulation, secondary condensers with chilled brine circulation. The vents of the secondary condensers are connected to the tertiary condensers with cooling water circulation. The team have thorough inspection of the columns and the following measures were suggested to increase the efficiency of the recovery systems, and to control the odour from the distillation columns :

a) The industry has provided the tertiary condenser and activated carbon column in order to reduce solvent loses from the distillation system,. During inspection the team observed that the vent from the third condenser is connected inappropriately bypassing the adsorption column. Therefore, it is suggested to provide the proper connections so that there will not be any bypassing of emissions from the tertiary condenser before venting into atmosphere.

b) The vent from the mother liquor storage tank (day tank) should also be connected to the adsorption column. The industry shall use the granular activated carbon instead of powder activated carbon to increase the efficiency of the adsorption.

c) Before distillation the solutions for recovery of solvent, the columns are operated under the reflux and after achieving the desired concentration, the column is operated. For this solution is being collected in an open container and transferred manually to the mother liquor storage tank. In order to avoid emissions, solutions should be collected in a closed container and transferred to the ML storage tank by gravity in a closed loop.

d) Proper railing should be provided in all stairs of distillation facility in order to avoid any accidents.

D) <u>Solvent Storage Facility (SSF)</u>

The industry is having 4 Nos. of Solvent Storage Tanks of capacity 20 KL each for the storage of Acetone, Methanol, Toluene and Monochloro Benzene which are used in the

process. The vents of all the solvent storage tanks are connected to the individual condensers of 6 m^2 capacity with cooling water circulation for each of the storage tanks and routed the collected solvent to the subsequent day storage tanks.

The team observed the odour of solvents near the Solvent Storage Facility even though proper precautions were taken by providing the condenser from the vent with circulation of cooling tower water. The odour may be due to acetone and methanol which are of low boiling substances. It is felt by the team the cold-water temperature may not be sufficient to condense the vapours of acetone and methanol. Therefore, it is suggested to use cold water by adding ice blocks in the Cooling tower and also to observe the inlet and outlet temperature by providing the thermometer.

Effluent Treatment Plant (ETP)

The team observed that the industry is segregating the wastewater into high and low TDS streams based on the TDS level of 10,000 mg/ltrs. The unit is treating the LTDS effluents in Biological ETP of capacity 30 KLD consisting of effluent collection tank, neutralization tank, lamella clarifier, aeration tank 3 Nos, tube settler, sand & carbon filters followed by 3 stage RO system of capacity 24 KLD. The permeate from the RO system is re-used in utilities (Boiler feed / Cooling tower makeup). The HTDS effluents are being disposed through stripper followed by MEE of 1.5 KL/hr and ATFD of capacity 150 Kgs/hr. To control the odour from the equalizing tanks, the tanks are covered with sheets and ducting system is connected to scrubber. Also, the vent of the ATFD is connected to the scrubbing system with Caustic solution as the scrubbing media to control odour from ATFD. The following additional measures are suggested to further reduce the odour from the effluent disposal system:

a) There is a possibility of vapour emission into atmosphere from the vent of the scrubber and in order to avoid this, it is suggested that the scrubber outlet should be passed through appropriately designed activated carbon adsorption system.

b) Equalizing tanks (for both high and low TDS effluents) and biological treatment systems (aeration tanks) are covered with sheets and there may be possibility of escaping of emissions during the functional operations of the systems. Therefore, it is recommended to cover Equalizing tanks (for both high and low TDS effluents)

and biological treatment systems (aeration tanks) completely and the vents of the tanks shall be connected to scrubbing system.

E) General Recommendations:

a) Presently industry is having VOC measurement at a fixed location. However, it is recommended to procure portable multi gas analyzer (VOC, H_2S, NH_3, etc.) for regular monitoring of odour causing gases at different locations more frequently and it should be recorded.

b) Solvent recovery should be ensured to the tune of 95% in the plant.

c) Industry is using water jet pump for the creation of suction in both the production blocks which may cause odour. It is suggested to monitor the water purity at the end of operations, once, to ensure that no solvent vapors are escaping through the water jet pump.

After detailed review of the industry as explained above, the following additional state-of-art odour control system are suggested by the team to further control odour from the industry:

1. Shall provide common adsorption column for the scrubbers provided in production block – B & C and the vents from the two scrubbers (water and caustic) shall be connected to the common adsorption column system with granular activated carbon specific to gaseous adsorption.

2. Shall provide proper connections without bypassing of adsorption column provided for the vent of the teriatory condenser provided for the solvent distillation column.

3. Shall connect the vent of the mother liquor storage tank (day tank) to the adsorption column and shall use the granulated activated carbon in the adsorption column to increase the efficiency of the adsorption.

4. The sampling solutions from the solvent distillation columns should be collected in a closed container and shall be transferred to the ML storage tank by gravity in a closed loop.

5. Shall provide proper railing in all stairs of distillation facility in order to avoid any accidents.

6. Shall use cold water by adding ice blocks in the Cooling tower provided for the vent condenser of solvent storage tanks and also to observe the inlet and outlet temperature by providing the thermometer.

7. Shall pass the vent of the scrubber provided for the ATFD outlet through appropriately designed activated carbon adsorption system.

8. Shall completely cover the Equalizing tanks (for both high and low TDS effluents) and biological treatment systems (aeration tanks) with powder coated sheets and the vents of the tanks shall be connected to scrubbing system.

9. Shall segregate the Sulphur powder bags in raw material warehouse and to store them in a separate closed room or enclosure with proper exhaust arrangement connected to scrubbing system.

10. Shall frequently check for leakages in gaskets of all the flange joints and replace accordingly.

11. Shall provide appropriate clamps to the metal pipes connected with HDPE tubing for avoiding leakages.

Dr. S. Venkata Mohan
Sr. Pr. Scientist
Council of Scientific and Industrial Research (CSIR)
Indian Institute of Chemical Technology (IICT), Hyderabad

Prof. S.V. Satyanarayana,
Department of Chemical Engineering
Jawaharlal Nehru Technological University, Anantapur College of Engineering, Anantapuramu

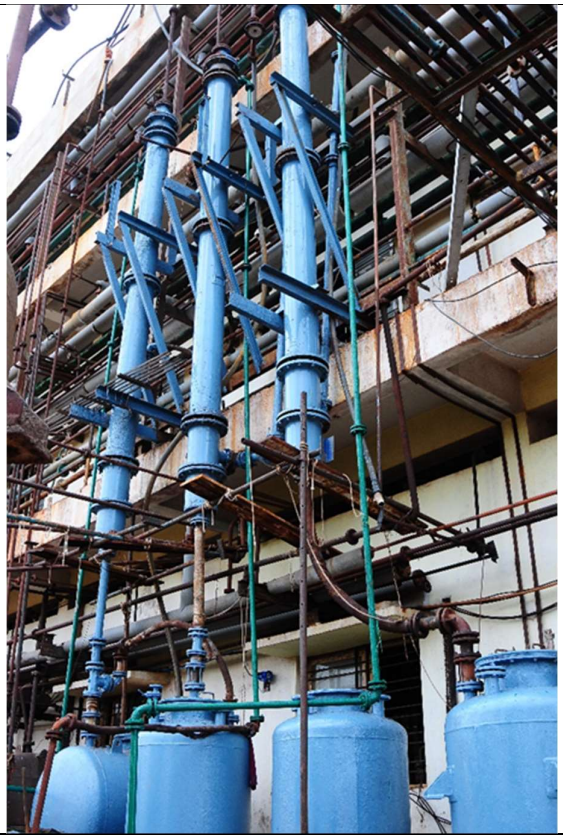
Dr. A. Gangagni Rao
Chief Scientist
Council of Scientific and Industrial Research (CSIR)
Indian Institute of Chemical Technology (IICT), Hyderabad

Photographs of M/S. Siflon Drugs, Rachanapalli (V), Ananthapuramu District taken during inspection.

Visit of the experts from IICT, Hyderabad and JNTU, Ananthapuramu to M/s. Siflon Drugs.

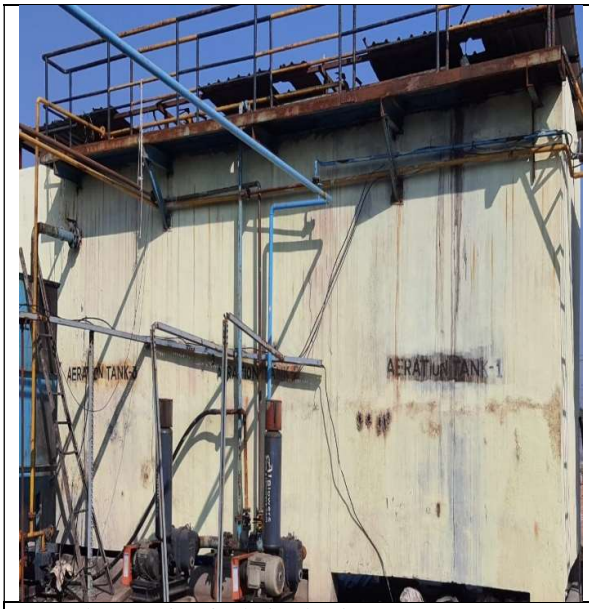
Solvent Storage Tanks provided with vent condensers

Distillation columns with primary, secundary, teritary condesers with Carbon adsoption column for the vent of the teritary condenser



Double Stage Scrubber provided in production Block- C

Double Stage Scrubber provided in production Block- B

	
Aeration tank of Biological ETP open to atmosphere	Stripper, MEE Plant and ATFD with scrubber provided for the vent of the ATFD

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL OFFICE: KURNOOL
1st Floor, Shankar Shopping Complex, Krishna Nagar Main Road, Kurnool – 518 002.

Phone: 08518-233619
Email: zoknl-jcee@appcb.gov.in

Lr.No. ATP-50/PCB/ZO-KNL/2021 – 261 **Date:** 18 **-10-2021**

To
The Director,
Indian Institute of Chemical Technology (IICT),
Uppal Rd, IICT Colony, Tarnaka, Hyderabad, Telangana – 500007
E-mail: director@iict.res.in.
Phone No. +91-40-27193482

Sir,

Sub:- APPCB- Zonal Office, Kurnool – Orders of the Hon'ble NGT dated 03.03.2021 and 09.09.2021 in O.A.No.114 of 2020 with regard to violation of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu Rural (M), Ananthapuramu District –Proposals called from your esteemed organization for identifying the sources of odour and also to suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGT – Reg.

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ZONAL OFFICE: KURNOOL
1st Floor, Shankar Shopping Complex, Krishna Nagar Main Road, Kurnool – 518 002.

Phone: 08518-233619
Email: zoknl-jcee@appcb.gov.in

Lr.No. ATP-50/PCB/ZO-KNL/2021 – 261 **Date:** 18 **-10-2021**

To
Prof. S.V.Satyanarayana,
Department of Chemical Engineering
Jawaharlal Nehru Technological University,
Anantapuram - 515 002.
E-mail:svsatya7@gmail.com, svsatya7.chemengg@jntua.ac.in, de@jntua.ac.in
Mobile : 091-9000551419 (O); 9849509167 (P)

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Yours faithfully,

JOINT CHIEF ENVIRONMENTAL ENGINEER(FAC)

Encl: a/a

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Copy submitted to the SEE (Legal cell), BO, Vijayawada for favour of information and necessary action.

Item No. 03 (Court No. 1)

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 114/2020

(With report dated 02.09.2021)

Secretary, St. Mark Educational Institution
Society Group of Institution Applicant

Versus

State of Andhra Pradesh Respondent

Date of hearing: 09.09.2021

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Respondent: Mr. TVS Raghavendra Sreyas, Advocate for AP PCB

ORDER

1. Question for consideration is violation of environmental norms by M/s Siflon Drugs at Ranchanpalli, District Anantapur, Andhra Pradesh. Vide order dated 14.10.2020 in OA 114/2020, the Tribunal directed remedial action by the State PCB and District Magistrate, Anantapur and filing of an action taken report.

2. The matter was thereafter considered on 03.03.2021 in the light of report of the State PCB dated 23.02.2021 after inspection by the joint Committee finding continued violation of environmental norms and recommending further steps by the industry particularly with regard to control of odour adversely affecting public health and environment. The operative part of the order is reproduced below:

"1. xxx ……xxx ……xxx
2. Accordingly, a common action taken report has been filed by the State PCB on 23.02.2021 to the effect that a joint Committee was constituted which carried out inspection with reference to nature of the industrial activity, details of water consumption, nature and extent of production, details of effluent generation, details of sources of air pollution, control equipment provided by the industry, details of the process emissions and control equipment provided, effluent treatment details, Hazardous & Non–Hazardous Solid waste details, details of the Environmental Clearance and details of Consent for Operation from A.P. Pollution Control Board. …..

xxx ……xxx ……xxx

5. In the light of above conclusion, there is need to ensure compliance of environmental norms as well as to assess and recovery of compensation for the past violations, following due process of law. In particular, remedial action be taken to control odour by utilising latest technology for the purpose.

6. Learned Counsel appearing for the State PCB has assured that within four weeks remedial action will be ensured and compensation will be assessed and recovered.

7. Accordingly, let an action taken report be filed within two months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF with a copy to the concerned unit for its response, if any, before the next date."

3. In pursuance of above, the State PCB has filed further report on 02.09.2021 after inspections on 04.03.2021 and 05.03.2021 to ascertain the status of compliance. The State PCB issued directions on 18.05.2021 for compliance followed by further inspection on 18.06.2021 and 19.06.2021 and show cause notice dated 01.07.2021, the order dated 10.08.2021. The relevant extracts from the report are:

"*xxx……xxx ……xxx*

12. The APPCB, Zonal Laboratory, Kurnool have conducted stack monitoring for the stack attached to boiler, vent of the scrubber and also Ambient Air Quality & VOC Monitoring within industry's premises, nearby villages and also in the complainant's premises in March, 2021 i.e., on 04.03.2021 & 05.03.2021 and also in June, 2021 i.e., on 18.06.2021 & 19.06.2021.

i. Inferences from the monitorings conducted by APPCB on 04.03.2021 &05.03.2021:

a) The Volatile Organic Compounds (VOCs) monitored within the industry premises show that the VOC values were in the range of 0.1 PPM to 2.8 PPM ***indicating that the characteristic odour nuisance prevailed within the premises****.*

b) The VOCs monitored in the nearby villages viz., Kodimi and Rachanapalli which are at an aerial distance of 0.9 KM and 1.9 KM respectively from the industry, ***show that the VOCs were below detectable limits.***

c) The VOCs monitored in the premises of Chiranjeevi Reddy Institute of Engineering & Technology (CRIT)(belonging to the Petitioner), Rachanapalli (V) at an aerial distance of 0.7 Km from the industry, show the values in the range of 0.1 PPM to 0.2 PPM during night hours from 10:20 PM to 2:30 AM on 4-5th March 2021.

d) The stack & ambient air quality monitoring conducted within the industry shows that the parameters viz., SPM, SO_2 and NO_x are within the stipulated standards. The copies of the anlaysis reports are enclosed as Annexure – 3.

ii. Inferences from the monitoring conducted by APPCB on 18.06.2021 & 19.06.2021:

a) The Stack and Ambient Air Quality Monitoring conducted within the industry's premises shows that the parameters viz., SPM, SO_2 and NO_x are within the stipulated standards.

b) The VOCs monitored within the industry premises show that the VOC values were in the range of 0.1 PPM to 4.4 PPM indicating that the characteristic odour of organic compounds in the industry's premises, which may be due to the solvent losses. The industry has to further reduce solvent losses by improving the efficiency of the solvent recovery systems.

c) The VOCs monitored in the nearby villages viz., Kodimi and Rachanapalli which are at an aerial distance of 0.9 KM and 1.9 KM respectively from the industry, show that the VOCs were within the Below Detectable Limit of 0.1 PPM

d) The VOCs monitored in the premises of CRIT College, Rachanapalli (Complainant premises) at an aerial distance of 0.7 Km from the industry, show that the VOCs were within the Below Detectable Limit of 0.1 PPM. The copies of the analysis reports are enclosed as Annexure – 4

8 to 10. xxx …… xxx …… xxx

11. The latest compliance of the industry to the directions issued by the Board vide Order dated 18.05.2021 are as follows:

S. No.	***Direction***	***Compliance***

1.	*The industry shall take all the necessary steps to reduce the odour nuisance within one month*	*The industry has upgraded the receivers used for the Scrubber with the jacketed receivers with water circulation to control the temperature of the Scrubbing media thereby increase the Scrubbing efficiency.* *Also, the industry has provided i) Scrubber to the vent of the Agitated Thin Film Drier provided for disposal of HTDS effluents and ii) Covered the HTDS effluent storage tanks and provided the ducting system (with ID fan of capacity 5 HP) connected to Scrubber to control odour nuisance from the High TDS effluent storage tanks.* *The industry is also operating MEE and ATFD only during day time to control the odour from the evaporation system.*
2	*The industry shall provide separate stacks for the 4 TPH and 3 TPH boilers as stipulated in the CFO order dt. 21.06.2018 within one month*	*Earlier, the industry is having Common Stack for the 3 TPH & 4 TPH boilers. Now, the industry is not operating the 3 TPH boiler and also disconnected the duct from 3 TPH boiler to the common stack permanently on 01.06.2021.* *The industry representative informed that they are planning to sell the 3 TPH boiler within a month's time.*
3	*The industry shall not manufacture new products and not exceeding the permitted quantity, other than those mentioned in CFO*	*The industry is not manufacturing any new products other than permitted in the Consent Order. Also, after the issue of Show cause notice dt.01.07.2021 by the Board for payment of Environmental Compensation for excess production, the industry has stopped carrying out of excess production.* *Out of the 9 products permitted in the CFO order dt.21.06.2018, the industry has manufactured 3 products namely Oxyclozanide, Niclosamide & Fenbendazole and has carried out production in total (which include all the 3 products) of about 16,500 Kgs i.e., 271.31 Kgs/day (Average) as against the consented quantity of 660 Kgs/Day during the period from 20.06.2021 to 20.08.2021. The industry has manufactured Oxyclozanide – 10,000 Kgs i.e., 163.93 Kgs/day (Average) as against permitted quantity of 166.67 Kgs/day;*

		Niclosamide – 4,500 Kgs i.e., 73.77 Kgs/day (Average) as against permitted quantity of 70 Kgs/day & Fenbendazole – 2,050 Kgs i.e., 33.6 Kgs/day (Average) as against permitted quantity of 33.33 Kgs/day during the above period.
4	*The industry shall dispose the Plastic liners, carboys and scrap waste only to the authorized recyclers*	*The industry is disposing the plastic liners, carboys and scrap waste regularly to M/s. Apex polymers, Visakhapatnam which is an authorized recycler.*
5	*The industry shall operate the two stage scrubbers for scrubbing of process emissions at all emission sources. The industry shall maintain online pH meters to the scrubbers*	*The industry is operating two stage scrubbers for the scrubbing of process emissions i.e., HCl & SO2 emissions emanated from the production Block –B & C. The industry has provided online pH meters for the scrubbers provided in Block - B & Block – C to monitor the scrubbing efficiency and these pH meters are provided with data logger system.*
6	*There shall not be any discharge of wastewater outside the industry premises*	*There is no discharge of wastewater outside the industry premises.*
7	*The online monitoring system shall be calibrated periodically as per equipment supplier's manual/CPCB guidelines before starting the production.*	*The industry has provided online effluent monitoring system for the outlet of RO for monitoring pH, BOD, COD and TSS. The industry has calibrated the online monitoring system on 15.03.2021 and the next due date for calibration of the system is on 15.09.2021.* *A copy of the calibration certificate is enclosed as Annexure-9.*

12. The industry utilizes solvents namely Tolune, Methanol, Mono Chloro Benzene, Acetone and n-hexane and is recovering the solvents using simple distillation/distillation columns. During inspection, the solvent losses from the recovery systems was found to be in the range of 5.02 to 7.15 %. The industry has to take further measures to achieve more than 95% recovery for the solvents in the distillation/recovery process to control the odour nuisance in the premises.

13. From the VOC monitoring conducted by the Board Officials within industry's premises, in the nearby villages and in the Complainant's premises, it was observed that the VOC's were recorded Below the Detectable Levels (BDL) in the nearby villages and also in the complainant's premises. However, the VOC's were recorded in the industry's premises in the range of 0.1 to 2.8 PPM (during monitoring on 04.03.2021 & 05.03.202) and 0.1 to 4.4 PPM (during monitoring on 18.06.2021 & 19.06.2021) which is due to the

solvent losses. The industry has to further reduce solvent losses by improving the efficiency of the solvent recovery systems.

14. The APPCB has reviewed the status of the industry before the External Advisory Committee (Task Force) meeting held on 22.07.2021 and issued directions to the industry vide order dt.10.08.2021 to continue to take all necessary steps to reduce the odour nuisance along with other conditions to comply with."

4. We have considered the matter with the assistance of the learned Counsel for the State PCB.

5. It is clear from the above that all necessary steps to reduce odour nuisance due to the solvent losses have not been taken inspite of direction of the State PCB. While some other steps have been taken, it is necessary to take further steps and also to verify that the violations have actually stopped. As recommended in the report, the industry has yet to take measures for achieving more than 95% recovery of the solvents in the distillation/recovery process to control odour nuisance in the premises. The industry needs to enhance solvent recovery and maintain Work Zone Standards. Standards for channelised VOC emissions may be achieved. The industry may operate with duly approved On and off - site emergency plans under MSIHC Rules, 1989. SPCB may apply the SoP for spent solvent recovery with such conditions as may be necessary for protection of environment and public health.

6. We also find that though compensation has been assessed for the past violations, the commencement of violation has been counted only from the date of inspection without recording any finding that prior to the said date such violation did not exist. As per common course of events once an inspection is found there is a presumption that the same was continuing unless shown otherwise. This aspect may also be looked into by the State PCB. Let a further action taken report and status of

compliance as on November 30, 2021 be ascertained and remedial action taken by the State PCB in exercise of its statutory powers, following due process of law. The State PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health.

7. A further action taken report may be filed on or before December 15, 2021 by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.

List for further consideration on 07.01.2022.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Brijesh Sethi, JM

Dr. Nagin Nanda, EM

September 09, 2021
Original Application No. 114/2020
DV

ANDHRA PRADESH POLLUTION CONTROL BOARD

REGIONAL OFFICE, ANANTHAPURAMU

D.No.6-3-145, Ram Nagar, Revenue, Ward No.6, Ananthapuramu – 515004

Tele:08554 226066, Email: roatp-ee1@appcb.gov.in

Lr.No.88/APPCB/RO: ATP/NGT/2021- 2480 **Date:16.11.2021**

To,
M/s. Siflon Drugs,
Rachanapalli (V),
Ananthapuramu Rural (M),
Ananthapuramu District

Sub: - APPCB – RO: ATP – Orders of the Hon'ble NGT dated 09.09.2021 in O.A.No.114 of 2020 – Implementation of the recommendation of the expert committee from Indian Institute of Chemical Technology (IICT), Hyderabad and Department of Chemical Engineering, JNTU, Ananthapuramu, etc., to identify the sources of odour and to suggest the state-of-art odour control systems required to be provided by the industry – Compliance on the recommendations – Compliance report - Reg.

Ref: -
1. Hon'ble NGT (PB) Order dated 14.10.2020 in O.A. Nos 114 of 2020.
2. Hon'ble NGT (PB) Order dated 03.03.2021in O.A. Nos 114 of 2020.
3. Hon'ble NGT (PB) Order dated 09.09.2021in O.A. Nos 114 of 2020.
4. Report of the expert Committee from IICT, Hyderabad received on 12.10.2021.
5. Instructions received from the JCEE, Unit-II, Board Office, Vijayawada vide E-mail Dated 16.11.2021.

* * * *

It is to inform you that, the Hon'ble NGT (PB), New Delhi heard the matter on 09.09.2021 and observed that i) all necessary steps to reduce odour nuisance due to the solvent losses have not been taken, ii) yet to take measures for achieving more than 95% recovery of the solvents, iii) needs to enhance solvent recovery, iv) maintain Work Zone Standards, v) operate with duly approved On and off-site emergency plans and Board to apply the SoP for spent solvent recovery. The Tribunal further directed "the state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health."

The APPCB vide letter dated 18.10.2021 requested the Indian Institute of Chemical Technology (IICT), Hyderabad and Department of Chemical Engineering, JNTU, Ananthapuramu, etc., to identify the sources of odour and to suggest the state-of-art odour control systems required to be provided by the industry.

On the request of the APPCB, Sri Dr. A. Gangagni Rao, Chief Scientist, Council of Scientific and Industrial Research (CSIR), Indian Institute of Chemical Technology (IICT), Hyderabad, along with Sri. S.V. Satyanarayana, Professor, Department of Chemical Engineering, Jawaharlal Nehru Technological University, Anantapuramu and Dr. S. Venkata Mohan, Sr. Pr. Scientist, Council of Scientific and Industrial Research (CSIR), Indian Institute of Chemical Technology (IICT), Hyderabad visited the industry on 09.11.2021 and submitted their report to the Board on 12.11.2021. A copy of the report is enclosed.

Vide reference 5th cited above instructions were issued to communicate the report of the expert committee to the industry with instructions to comply with recommendations of the committee in **3 weeks time** and also to implement any other additional measures necessary to control odour and to ensure recover of solvents not less than 95%.

Hence, you are hereby directed to implement the recommendations of the expert committee within **3 weeks time** and also to implement any other additional measures necessary to control odour and to ensure recover of solvents not less than 95%. The compliance report on the recommendations of the committee along with photographic evidences shall be submitted to this office **within 3 weeks** for taking further necessary action in the matter.

MBS Shankara Rao
ENVIRONMENTAL ENGINEER

Copy submitted to the JCEE, Unit-II, Board Office, Vijayawada for favour of kind information.

Copy submitted to the JCEE, Zonal Office, Kurnool for favour of kind information.

Copy submitted to the SEE (Legal cell), BO, Vijayawada for favour of kind information.

Date: 14.12.2021

To,
The Member Secretary,
A.P. Pollution Control Board,
Board Office, Vijayawada.

// Kind Attention: JCEE, UH-II //

Sir,

Sub: APPCB – M/s. Siflon Drugs, Sy.No.25/4, Rachanapalli (V), Ananthapuramu District – Inspection report– Submitted – Reg.

Ref:
1. Orders of the Hon'ble NGT dated 09.09.2021 in O.A.No.114 of 2020
2. E-Mail received from SEE, Legal Cell, Board Office, Vijayawada on13.09.2021.
3. APPCB, Regional Office, Ananthapuramu letter dated 06.10.2021 requesting for permission for engaging the services of expert organizations to suggest state-of-art odour control systems.
4. APPCB, Zonal Office, Kurnool letter dated 18.10.2021 to the IICT, Hyderabad and JNTU, Ananthapuramu.
5. Inspection of the industry by the expert team from Indian Institute of Chemical Technology (IICT), Hyderabadand Department of Chemical Engineering, JNTU, Ananthapuramu, etc., to identify the sources of odour and to suggest the state-of-art odour control systems on 09.11.2021.
6. Report of the expert committee from IICT, Hyderabad received on 12.11.2021.
7. APPCB, RO, Ananthapuramu status report dated 15.11.2021.
8. Instructions received from the JCEE, UH-II, Board Office, Vijayawada vide E-Mail dated 16.11.2021.
9. APPCB, RO, Ananthapuramu letter dated 16.11.2021 directing M/s. Siflon Drugs to implement the recommendations of the expert committee within 3 weeks.
10. E-Mail received from the JCEE, UH-II, Board Office, Vijayawada on 02.12.2021.
11. Instructions of the JCEE (FAC), Zonal Office, Kurnool on 04.12.2021.

* * * *

It is to submit that the Hon'ble NGT vide Order dated 09.09.2021 directed as *"Let a further action taken report and status of compliance as on November 30,2021 be ascertained and remedial action taken by the State PCB in exercise of its statutory powers, following due process of law. The State PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health"*. As per the instructions issued in the reference 11thcited above, M/s. Siflon Drugs, located at Rachanapalli (V), Ananthapuramu District was inspected by Sri M.V.N. Prasad, SEE, Zonal Office, Kurnool, Sri M Bujjibabu JSO, Zonal Office, Kurnool and Sri MBS Shankara Rao, EE, RO, Ananthapuramuon 07.12.2021 & 08.12.2021.Sri J. Rambabu, Vice President (Operations) of the industry was present during the inspection. The details of the inspection are as follows:

1.	Name and location of the industry	:	M/s.Siflon Drugs, Sy.No.25/4, Rachanapalli (V), Ananthapuramu District.
2.	Line of Activity	:	Manufacturing of Veterinary Drugs & its Intermediates
3.	Category of the industry	:	Red-Haz.
4.	Date of commissioning of industry	:	May, 1999
5.	Total Project cost	:	Rs.13.46 Crores
6.	Total area of the plant	:	13.19 acres.
7.	Surroundings of the Industry:	:	**North:** Ananthapuramu to Bellary State Highway; **South:** M/s. Siflon Drip and

			Sprinklers Private Limited; **East:** D. Agricultural Land; **West:** Dry Agricultural Land; **Distance from Nearest Habitation**: The nearest habitation is Kodimi(V) and is existing at a distance of 0.9 Km in North-East direction from the industry. Rachanapalli (V) is existing at a distance of about 1.3 Kms in Eastern direction from the industry. Ananthapuramu town is at a distance of 5.5 Kms from the industry. St. Mark Educational Institution is at distance of 500 mtrs from the industry in the North Western direction. Era International School is at a distance of about 300 mtrs and Chiranjeevi Reddy Institute of technology is at a distance of about 600 mtrs in North-west direction; **Distance from Nearest water body:**Kodimi canal is at a distance of 1.1 Km in North-East direction.
8.	Extent of Green belt developed in Acres	:	The industry has developed additional greenbelt of another 0.5 acres recently in additional to the existing greenbelt area of about 5.0 acres within the premises. The greenbelt developed is about 41.69 % of the total area of the industry.
9.	Status of operation	:	The unit was in operation and at present, the industry is manufacturing 4 Nos.of permitted products viz., Oxyclozanide, Niclosamide, Rafoxanide and Fenbendazole.
10.	Status Consent under Water & Air Acts & HW Authorization.	:	The Board issued CFO & HWA Order to the industry vide Order dated 21.06.2018 with a validity up to 30.04.2022. A copy of the same is enclosed as **Annexure-1.**
11.	Name of the products and by-products manufactured with quantity (per day or month or annum).	:	As per the Consent Order dated 21.06.2018, the industry was permitted to manufacture the following products and quantities.

Sl. No.	Name of the Products	Consented Quantity as per CFO order dated: 21/06/2018 in Kgs/day
	Group – A:	
1	Rafoxanide	100 Kg/day
2	Closantel Base	200 Kg/day
3	Parziquantel	100 Kg/day
4	Clorsulon	100 Kg/day
5	Butaphosphan	40 Kg/day
6	Firocoxib	10 Kg/day
	Total Group - A	**550.0 Kg/day**
	Group – B:	
1	Oxyclozanide	166.67 Kg/day
2	Niclosamide	70 Kg/day
3	Albendazole	66.67 Kg/day
4	Fenbendazole	33.33 Kg/day
5	Closantel Sodium	50 Kg/day
6	Closantel Base	100 Kg/day
7	Triclabendazole	66.67 Kg/day
8	Rafoxanide	66.67 Kg/day
9	Enrofloxacin	40 Kg/day
	Total Group - B	**660.00 Kgs/day**
Note: The industry shall manufacture following any one group of products at any given point of time.		

12. **Comments on whether the products are permitted products and production is with the permitted capacity :**

The industry is manufacturing only Group - B products and is manufacturing only 04 Nos. of the 9 Nos.of permitted products in Group – B.The month wise details of production from Aug, 2021 to Nov, 2021are verified using the GST records, delivery challans and job work invoices. As per the records, the monthwise details of products manufactured are as follows:

Month	Oxyclozanide(in Kgs)	Rafoxanide (in Kgs)	Niclosamide (in Kgs)	Fenbendazole (in Kgs)	Total (in Kgs)
Permitted quantity as per CFO	166.67 Kgs/day (or) 5000 Kgs/month	66.67 Kgs/day (or) 2000.1 Kgs/month	70 Kgs/day (or) 2100 Kgs/month	33.33 Kgs/day (or) 999.9 Kgs/month	660 Kgs/day (or) 19800 Kgs/month
Aug, 2021	4812 Kgs	1933 Kgs	1985 Kgs	812 Kgs	9542 Kgs
Sep, 2021	4864 Kgs	1940 Kgs	2026 Kgs	815 Kgs	9645 Kgs
Oct, 2021	4880 Kgs	1947 Kgs	2035 Kgs	910 Kgs	9772 Kgs
Nov, 2021	4852 Kgs	1950 Kgs	2046 Kgs	816 Kgs	9664 Kgs
Total in Kgs	**19408**	**7770**	**8092**	**3353**	**38623**
Total inKgs/day	**159.08**	**63.68**	**66.32**	**27.48**	**316.58**

13. **Details of the Excess Production carried out by the industry:**Nil

14. **The Details of the Water Consumption and Flow Meters Status:**

The source of water supply for the industry is Borewell and as per the CFO order dt. 21.06.2018, the details of permitted water consumption is as follows:

S.No	Purpose	Consented quantity as per CFO order dated: 21.06.2018 (in KLD)
1	Process &Washings	8.8
2	Boiler feed	10
3	Cooling blow down	2.0
4	Gardening	1.00
5	Domestic	2.00
	Total:	**23.8 KLD**

The industry has provided flow meter for the i)for the raw water sump, ii) boiler feed, iii) process& washings and Cooling tower makeup, iv) Domestic and is maintaining records. As per the records, the total water consumption is 1972.65 KL i.e., avg 16.16 KLD during the period from Aug, 2021 to Nov, 2021 and the flow meter readings during inspection on 07.12.2021 are as follows: i) Raw Water sump:4757.038 KLii) Boiler feed:2720.177KL iii) process & washings and Cooling tower makeup:3106.338KL iv) Domestic:484.498 KL.

15. **Details of Effluent generation and flow meters status :**

As per the CFO order dt. 21.06.2018, the details of the permitted effluent generation and its disposal are as follows:

S.No	Outlet Description	Max Daily Discharge	Point of Disposal
1	Process & washings (6.80 KLD), Boiler blow down (1.80 KLD), Cooling bleed off (0.55 KLD)	9.1 KLD	• Stripper condensate shall be sent to TSDF/Cement plants for co processing. • Condensate from MEE (1.5 TPH) & ATFD (1.5 TPH) shall be sent to secondary ETP followed by RO system (1.0 KL/hr).

			• RO permeate shall be reused as cooling makeup and RO rejects shall be sent to MEE. • Salts from MEE & ATFD shall be sent to TSDF.
2	Domestic effluents	0.85 KLD	Septic tank followed by soak pit.

The industry has provided flow meter at the i) MEE feed, ii) MEE condensate, iii) Stripper outlet, iv) MEE concentrate, v) RO permeate, vi) HTDS effluents collection tank, vii) LTDS effluents collection tank. All these flow meters are working conditions and meter readings during inspection are as follows: i) MEE feed: 11692.85 KL ii) MEE condensate: 1558.33KLiii) RO permeate:1283.759KLiv) HTDS effluents collection tank: 228.658 KL v) LTDS effluents collection tank: 621.862 KL (installed new flow meter on 16.06.2021).

The industry is maintaining the records of HTDS and LTDS effluent generation and as per the records, industry has generated wastewater of about 758.539 KL i.e,. 5.92 KLD (average) as against permitted 9.1 KLD during the period from Aug, 2021 to Nov, 2021.

16. **Details of the Effluent Treatment System and disposal:**

The industry is segregating the waste water into High and Low TDS effluent streams. The washings, boiler blow down, cooling bleed off, MEE and ATFD condensate is being treated in the Biological ETP of capacity 30 KLD consisting of effluent collection tank, neutralization tank, lamella clarifier, Aeration tanks 3 Nos, tube settler, sand & carbon filters followed by RO systemof Capacity 1.0 KL/hr. The permeate of RO system is used in cooling towers and Boiler makeup. The RO rejects is mixed with HTDS effluent and treated in the MEE (3 stages) of capacity 1.5 KL/hr with filter press and stripper followed by ATFD.The MEE & ATFD condensate is taken back to Biological ETP.

17. **Compliance with standards stipulated based on Board data / online monitoring systems:**

The industry has provided online effluent monitoring system for the outlet of RO for monitoring pH, BOD, COD and TSS.During inspection, it was observed the online effluent monitoring system is indicating pH – 7.9; COD –180.95 mg/ltr;BOD – 27.08 mg/ltr(BOD Analyzer is under repair); TSS – 45.49 mg/lt. The industry has calibratedthe online monitoring system on 10.11.2021 and the next due date for calibration of the same is on 09.05.2022.The photograph of the online effluent monitoring system provided at the outlet of RO and also Calibration certificate is enclosed as **Annexure – 2.**

Also, during inspection the samples of i) MEE feed, ii) MEE condensate, iii) In let of Biological ETP, iv) Outlet of ETP / inlet of RO, v) RO permeate before used for utilities, vi)RO rejects were collected and submitted to Zonal Laboratory for analysis purpose. The results are awaited.

18. **Details of Sources of Air pollution & Control equipment provided by the industry:**

The industry is having the following Air pollution sources and control equipments

S. No.	Source of Pollution Note: Capacity should be mentioned for each unit	Control equipment provided	Stack height in Mts - above GL	Limiting Standard prescribed by Board
1.	Attached to Briquettes/Coal fired Boiler of capacity 4 TPH	Multi Cyclone dust collector	30mts With dia 0.7mts at the top. (common chimney)	SPM – 115 mg/Nm^3
2.	Attached to Briquettes/Coal fired Boiler of capacity 3 TPH (for standby operations)			
3.	Attached to Scrubbers (HCl fumes) - 4Nos.	---	20mts	HCl - 35 mg/Nm^3
4.	Attached to 500 KVA DG set	Silencer with acoustic enclosure	14ft	SPM – 115 mg/Nm^3

19. **Details of the process emissions &Control equipment provided:**

The industry has 2 blocks of production viz., Block-B and Block-C and the details of the process emissions and control equipment provided in each of the block are as follows:

Production Block- B: In the Block – B, Fenbendazole&Rafoxanide products are manufactured. HCl emissions are emanated from the process in stage – 2 of Fenbendazole and stage -3 of Rafoxanide.

a) The industry has provided 1 No.of double stage scrubbers in production Block- B with water as a scrubbing media for the stage -1 of scrubber and caustic lye as a scrubbing media for stage-2 of scrubber for the scrubbing the HCl emissions emanated from the production block.

Production Block- C: In production Block- C, Oxyclozanide & Niclosamide products are manufactured. HCl and SO_2 emissionsare emanated in the stage – 3 of Oxyclozanide and HCl emissions are emanated in the Niclosamide.

a) The industry has provided 1 No.of double stage scrubbers in Production Block-C with water as a scrubbing media in Stage – 1 of scrubber and caustic lye as scrubbing media in stage- 2 for scrubbing the HCl, SO_2 emissions.

b) Apart from the above, the industry has recently installed 2 Nos.of single stage scrubbers in Production Block-C for scrubbing the nitro fumes emanated in Stage – I of Oxyclozanide and also for the vents of the all the reactors in the production Block – C.

c) The industry has provided Jacketed receivers for the scrubbers in Production Block – B & Cto minimize the temperature of scrubbing solution.

d) Also, as per the recommendation of the expert committee, the industry has provided Candle filter with granulated carbon absorption system for the vent of the scrubbers provided in both the production Blocks. The photographs of the scrubbers provided with candle filter is enclosed as **Annexure – 3**.

e) The industry has provided online pH meters for the scrubbers provided in Block - B & Block – C to monitor the scrubbing efficiency and these pH meters are provided with data logger system. The industry is regularly operating scrubbers and as per the data logger system the pH indicated in Online pH meter for

scrubber – 1 (Production Block – B) is in the range of – 10.03 to 13.7 and for the scrubber – 2 (Production Block – C) is in the range 10.0 to 13.89. The Online data for the pH meters for the period from Aug, 2021 to Nov, 2021 is enclosed as **Annexure – 4.**

f) During inspection, the pH of the scrubbing media for the Block- B is observed to be 12.6 and for the Block- C is 10.03.The Live view of values of pH meter of the Scrubbers on 07.12.2021 at 1.12 PM is enclosed as **Annexure- 5.**

20. **Compliance with standards stipulated based on Board data / online monitoring system**

The Officials of Zonal Laboratory, Kurnool have conducted stack monitoring for the stack attached to Boiler of capacity 4 TPH and also stack attached to scrubber on 08.12.2021. As per the analysis reports, the analysis values are as follows:

S. No	Date of Monitoring	Monitoring conducted	Parameter	Monitored value in mg/Nm^3	Board's Stipulated standardmg/Nm^3
1	08.12.2021	Stack attached to 4 T/hr Boiler.	Particulate Matter (PM)	75.6	115
2	08.12.2021	Stack attached to Scrubbers at Production Block - B	HCl	24.9	35
			Particulate Matter (PM)	6.6	---

21. **<u>Details of solid and hazardous waste generation, storage and disposal</u>** :

As per the HWA order dated 21.06.2018, the industry is permitted to generate the following quantities of Hazardous Waste and disposal options.

a) Hazardous waste:

S. No.	Name of the Hazardous Waste	Stream Number as per HWM Rules	Quantity of Hazardous waste (after change of product mix)	Disposal Option
1.	MEE Salts/ETP Sludge	35.3 of Sch-I	234.95 Kgs/day	TSDF, Nellore for secured land filling.
2	Iron Sludge	28.1 of Sch-I	78.71 Kgs/day	Authorised Cement Industries for co-processing / TSDF.
3.	Organic / solvent residue	20.3 of Sch-I	255.89 Kgs/day	
4.	Spent carbon	28.1 of Sch-I	22.81 Kgs/day	
5.	Waste Oils & Grease	5.1 of Sch-I	25 Lts/annum	Disposed to authorized re-processors / recyclers

b) Non-Hazardous Solid Waste :

S. No.	Name of the waste	Source of generation	Quantity of waste (kg/day)	Disposal Option
1	Boiler Ash	From the boiler	1.5 TPD	Sold to Brick manufacturers

<u>Storage:</u>

The industry is storing the MEE salts / ETP sludge, Iron sludge below the LTDS effluent collection tank and spent carbon in closed shed near the ETP. The industry has provided concrete lined flooring for the hazardous storage sheds.

Disposal Details: During inspection, the month wise details of disposal of hazardous waste for the period from Aug, 2021 to Nov, 2021 and the details are as follows:

Name of the solid waste	Quantity disposed in Tones during the month				Quantity disposed in Tones
	Aug, 21	Sep, 21	Oct, 21	Nov, 21	
MEE Salts/ETP Sludge	Nil	Nil	7.53	6.85	14.38
Organic / solvent residue	Nil	13.5	Nil	Nil	13.5
Iron Sludge	Nil	6.25	Nil	Nil	6.25
Spent carbon	Nil	4.7	Nil	Nil	4.7
				Total:	**38.83**

The industry has stored about 29.68 Tons of Hazardous waste in the premises. The unit representative informed that they will disposed the hazardous waste to cement industries / TSDF within a week.

22. **Compliance of the industry on the directions issued by Task force:**

The status of the industry was reviewed by the External Advisory Committee (Task Force) meeting held on 22.07.2021 at Board Office, Vijayawada and as per the recommendation of the EAC committee, the Board vide order dated 10.08.2021 issued directions to the industry to comply with. The details of the directions issued and the latest compliance of the industry is as follows:

S.No.	Direction	Compliance
1	The industry shall continue to take all the necessary steps to reduce the odour nuisance.	The expert committee of IICT, Hyderabad and JNTU, Ananthapuramu have recommended 11 Nos.of state-of-art of odour control systems in the report dated 12.11.2021. The compliance of the industry to the recommendations is reported at Sl.No.27.
2	The industry shall not manufacture any un-consented products and shall not exceed the permitted quantity in any form.	The industry is manufacturing only consented products within the permitted capacity for the period from Aug, 2021 to Nov, 2021.
3	The industry shall comply with Board directions dt 18.05.2021.	The compliance report on the directions issued by the Board vide Order dated 18.05.2021 is enclosed as **Annexure - 6.**
4	The industry shall pay balance EC within due dates as committed vide letter dated 20.07.2021.	The industry vide letter dated 29.09.2021 paid the balance Environmental Compensation amount of Rs.18,90,000/- vide D.D.No.049509, dated 29.09.2021to the Board and same was submitted to the Board Office, Vijayawada vide Letter dated 29.09.2021. The total compensation paid by the industry is Rs.35.30 Lakhs which includes forfeiting of the Bank Guarantee of Rs.4.0 Lakhs.

23. **Compliance of the industry on the conditions (Schedule – B) stipulated in the CFO Order dated 21.06.2018:**

<table>
<tr><th>S.No</th><th>Conditions stipulated in Schedule –B of CFO Order dated 21.06.2018.</th><th>Compliance status</th></tr>
<tr><td>1)</td><td>The source of water is APIIC supply. The following is the permitted water consumption:
<table><tr><th>S.No</th><th>Purpose</th><th>Quantity (in KLD)</th></tr></table></td><td>Complied.
The industry is drawing water from the Bore well existing within the premises.
The industry has provided flow meter for the</td></tr>
</table>

	1 Process &Washings: 8.8 2 Boiler feed: 10 3 Cooling blow down: 2 4 Gardening: 1 5 Domestic: 2 **Total: 23.8**	i) for the raw water sump, ii) boiler feed, iii) process & washings and Cooling tower makeup, iv) Domestic and is maintaining records. As per the records, the total water consumption is 1972.65 KL i.e., avg 16.16 KLD during the period from Aug, 2021 to Nov, 2021 and the flow meter readings during inspection on 07.12.2021 are as follows: i) Raw Water sump: 4757.038 KL ii) Boiler feed: 2720.177 KL iii) process & washings and Cooling tower makeup: 3106.338 KL iv) Domestic: 484.498 KL.
2)	The industry shall provide separate flow meters within one month for assessing the quantity of water used for the above purposes	
3)	The industry shall provide flow meters with totalizers at the inlet and outlet of Stripper, RO system and outlet of ATFD condensate by the end of July, 2018.	Complied. The industry has provided flow meters with totalizers at the inlet and outlet of Stripper, RO system and MEE / ATFD condensate.
4)	The industry shall provide Secondary Effluent Treatment Plant, within two months (i.e, before 15th of August 2018) as committed by the industry vide lr. Dt.20.06.2018 to achieve Zero Liquid Discharge (ZLD).	Complied. The industry has provided biological ETP of capacity 30 KLD consisting of treatment units Equalization tank of capacity 80 KL, 1 No.of Lamella clarifier of capacity 6 KL/hr, Aeration tank – 1 of capacity 35 KL, Aeration tank – 2 of capacity 33 KL, Aeration tank – 3 of capacity 31 KL, Tube settler – 6 KL/hr, sand filters, activated carbon filter, treated water collection tank of capacity 10 KL and RO system for condensate of capacity 1 Kl/hr to achieve ZLD system.
5)	The industry shall not discharge any waste water outside the premises and shall maintain Zero Liquid Discharge system.	
6)	The industry shall provide containers detoxification facility by the end of July 2018. . Container & Container liners shall be detoxified at the specified covered platform with dyke walls and the wash wastewater shall be routed to low TDS collection tank for treatment and disposal.	Complied. The industry has provided detoxification facility for the drums with rotating wheel with high pressure jet pump for the detoxification of the chemical drums. The detoxification is provided with dyke walls and wastewater from the detoxification facility is routed to HTDS effluent collection tank.
7)	The emissions shall not contain constituents in excess of the prescribed limits mentioned below: **Chimney No** / **Parameter** / **Emission Standards** 1 / Particulate Matter / 115 mg/Nm^3 2 / Particulate Matter / 115 mg/Nm^3 3 / HCl / 35 mg/Nm^3	Complied. The Officials of Zonal Laboratory, Kurnool have conducted stack monitoring for the stack attached to Boiler of capacity 4 TPH and alsovent of the scrubber on 08.12.2021. As per the analysis report, i) The value of particulate matter for Stack attached to the boiler is 75.6 mg/Nm^3(asagainst the standard of 115 mg/Nm^3) and (ii)the value of HCl in the Vent attached to the scrubber HCl is 24.9mg/Nm^3 (as against the standard of 35 mg/Nm^3).
8)	The industry shall provide separate stacks and air pollution control equipments (Multi cyclone dust collectors) to the 4 TPH and 3 TPH boilers as agreed by the proponent during the CFE committee meeting held on 10.01.2018.	Complied. The industry is not operating the 3 TPH boiler and alsodisconnected the duct from 3 TPH boiler to the common stack permanently on 01.06.2021.
9)	The industry shall comply with ambient air quality standards of PM10 (Particulate Matter size less than 10 µm) - 100 µg/ m3; PM2.5 (Particulate Matter size less than 2.5 µm) - 60 µg/ m3; SO2 - 80 µg/ m3; NOx - 80 µg/m3, outside the factory premises at the periphery of the industry. Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009. Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A)	Complied. The Officials of Zonal Laboratory, Kurnool have conducted Ambient Air Quality Monitoring within the premises on 07.12.2021 &08.12.2021. As per the analysis reports, the value of $PM_{10}$is in the range of 65.6 to84.7µg/m^3(as against the standard of 100 µg/m^3); $SO_2$is in the range of 18.4 to 20.2µg/m^3 (as against the standard of 80 µg/m^3) and$NO_2$is in the range of 22.2 to 26.4 µg/m^3 (as against the standard of 80 µg/m^3

	Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A) Night time (10 PM to 6 AM) - 70 dB (A)	26.4 $\mu g/m^3$ (as against the standard of 80 $\mu g/m^3$
10)	The industry shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Act Rules. In case of DG sets of capacity more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.	---
11)	The industry shall not manufacture any product, other than those mentioned in this order, without CFE & CFO of the Board. The industry shall not increase the capacity beyond the permitted capacity mentioned in this order, without obtaining CFE & CFO of the Board.	Complied. The industry is manufacturing only consented products within the permitted capacity for the period from Aug, 2021 to Nov, 2021.
12)	The industry shall install and operate multi stage scrubbers for scrubbing of process emissions at all emission sources. The details of chemicals consumption used in the scrubber should be recorded and kept accessible for the inspecting officials of the Board.	Complied. The industry is operating two stage scrubbers for the scrubbing of process emissions from the Block –B & C. The industry has provided online pH meters for the scrubbers provided in Block - B & Block – C to monitor the scrubbing efficiency and these pH meters are provided with data logger system. During inspection, the pH of the scrubbing media for the Block- B is observed to be 12.6 and for the Block- C is 10.03.
13)	The industry shall provide data logger facility for VOC.	Complied. The industry has provided VOC meter with online data logging system near production blocks. As per the data, the maximum VOC value was recorded as 4.41 (on 19.11.2021 at 18.00 hr) during the period from 01.08.2021 to 30.11.2021.
14)	The industry shall provide online pH meter with data logger facility to the scrubbers by the end of July, 2018.	Complied. The industry has provided online pH meter for the scrubbers provided in Block- B and Block-C with online data logging system.
15)	There shall not be any spillages / discharges of chemicals / effluents on ground. The drums containing chemicals & wastes should be stored on elevated platform provided with leachate/spillages collection pit. In no case the drums should be stored on naked ground.	Complied. The industry has provided 2 Nos.of closed sheds for storage of hazardous chemicals drums. The industry is storing the drums on the elevated platform provided with spillages collection system.
16)	The industry shall ensure implementation of requisite measures to prevent air pollution, fugitive emissions & odour nuisance in the surrounding area.	The industry has implemented the odour control measures and the details were reported above at Sl.No.22. (1). During the inspection, the Volatile Organic Compounds (VOC) was monitored in the premises using Hand Held VOC Detector (PID Detector) and VOC's were recorded in the range of 0.15 to 3.95 PPM within the industry's premises.
17)	The industry shall discard the use Solar Evaporation pond immediately.	Complied. The industry has dismantled the Solar Evaporation pond and constructed drum storage shed in its place.
18)	The industry shall maintain the following records and the same shall be made available to the inspecting officers of the Board: a) Daily production details (ER-1 Central	Maintaining

	Excise Returns). b) Characteristics of effluents and emissions. c) Quantity of Effluents generated, evaporated in MEE, recycled/reused. d) Log Books for pollution control systems. e) Hazardous/non hazardous solid waste generated and disposed. f) Manifest copies of effluents / hazardous waste. g) Inspection book.	Maintaining Maintaining Maintaining Maintaining Maintaining Maintaining
19)	The industry shall dispose solid waste (NON HAZARDOUS) as follows: **S. No. / Name of the waste / Quantity / Disposal Option** 1 / Ash / 1 TPD / Shall be sent to the brick manufacturers	Complied. The industry is using firewood as a fuel for the boiler and is disposing the boiler ash to the brick manufacturing industries.
20)	The industry shall submit compliance report on the conditions mentioned in the consent order every 6 months to the Regional Office/Zonal Office.	Submitted.
21)	The industry shall comply with the Task Force directions issued by the Board vide order dt. 02.04.2017.	Redundant. The industry was later reviewed by the Task Force committee on 04.06.2020 and Stop Production Order was issued on 16.06.2020. The Stop Production Order was revoked on 23.07.2020 and the latest directions were issued to the industry on 10.08.2021. The compliance of the industry to the Directions issued is submitted at Sl.No.22 above.
22)	The industry shall comply with the conditions stipulated in the CFE (Change of product mix) order dt.30.05.2018.	---
23)	The industry shall develop green belt in an area of 1.85 acres in addition to existing green belt of 2.5 acres in the ensuing monsoon so that the total green belt shall not be less than 33% of the total area.	Complied. The industry has developed additional greenbelt of another 0.5 acres recently in additional to the existing greenbelt area of about 5.0 acres within the premises. The greenbelt developed is about 41.69% of the total area of the industry.

24. **Details of Ambient Air Quality Monitoring and VOC monitoring conducted within the industry premisesand also in the nearby villages and CRIT.**

a) Ambient Air Quality Monitoring conducted within the industry premises:

S.No	Date of Monitoring	Monitoring conducted by	Parameter	Avg. Concentration in $\mu g/m^3$	NAAQ Standard in $\mu g/m^3$
1	07.12.2021 & 08.12.2021. AAQM Location: Near the 500 KVA DG set (down wind direction)	Junior Scientific Officer, Zonal Laboratory, Kurnool.	Particulate Matter (PM_{10})	65.6	100
			Sulphur Dioxide (SO_2)	18.4	80
			Nitrogen Dioxide (NO_2)	22.2	80
2	07.12.2021 & 08.12.2021. AAQM Location: Near the MEE Plant (down wind direction)	Junior Scientific Officer, Zonal Laboratory, Kurnool.	Particulate Matter (PM_{10})	84.7	100
			Sulphur Dioxide (SO_2)	20.2	80
			Nitrogen Dioxide (NO_2)	26.4	80

b)Ambient Air Quality Monitoring conducted outside the industry premises :

S.No	Date of Monitoring	Monitoring conducted by	Parameter	Avg. Concentration in µg/m^3	NAAQ Standard in µg/m^3
1	07.12.2021 & 08.12.2021 AAQM Location: on the terrace of Grama Sachivalayamu building of Rachanapalli (v).	Junior Scientific Officer, Zonal Laboratory, Kurnool .	Particulate Matter (PM_{10})	66.4	100
			Sulphur Dioxide (SO_2)	11.8	80
			Nitrogen Dioxide (NO_2)	24.3	80
2	07.12.2021 & 08.12.2021 AAQM Location: on the terrace of Sri K. Tirupal Reddy house at Kodimi (v).	JSO, Zonal Laboratory, Kurnool.	Particulate Matter (PM_{10})	71.8	100
			Sulphur Dioxide (SO_2)	10.6	80
			Nitrogen Dioxide (NO_2)	20.2	80
3	07.12.2021 & 08.12.2021 AAQM Location: On the terrace ofCRIT building	JSO, Zonal Laboratory, Kurnool.	Particulate Matter (PM_{10})	56.4	100
			Sulphur Dioxide (SO_2)	8.4	80
			Nitrogen Dioxide (NO_2)	16.2	80
4	07.12.2021 & 08.12.2021 AAQM Location: On the terrace of Susheela Reddy B.Ed College	JSO, Zonal Laboratory, Kurnool.	Particulate Matter (PM_{10})	62.6	100
			Sulphur Dioxide (SO_2)	12.4	80
			Nitrogen Dioxide (NO_2)	21.3	80

c) Details of Monitoring of Volatile Organic Compounds(VOC):

Also, the Officials of Zonal laboratory, Kurnool conducted VOC monitoring at fourlocations within industry's premises, and in the surrounding villages namely Kodimi, Rachanapalli Village, Chiranjeevi Reddy Information Technology, Rachanapalli(V) and near Susheela Reddy B.Ed College, Rachanapalli (V)(Complainant premises) on 07.12.2021 & 08.12.2021. As per the analysis reports, the VOC values are as follows:

i) VOC Monitoring within industry's premises:

The details of monitoring of Volatile Organic Compounds (VOC) carriedout within industry's premises at four locations i.e., i)V - 01 : Near production block area of M/s Siflon Drugs, Rachanapalli(V); ii)V - 02 :Near scrubber area of M/s Siflon Drugs, Rachanapalli(V); iii)V - 03: Near MEE area of M/s Siflon Drugs, Rachanapalli(V),iv)V - 04 : Near boiler area of M/s Siflon Drugs, Rachanapalli (V) are as follows:

a) **VOC Values recorded in PPM during the time 10.20 AM to 04.45 PM & 10.20 PM to 11.40 PMon 07.12.2021**

Sl No	Sample code	Parameters (value in ppm)														
		Acetone			Methanol			Benzene			Chloro benzene			Toluene		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
	In the Industrial Premises:															
1.	V-01	1.1	2.3	1.7	2.1	4.4	3.25	0.1	0.2	0.15	0.1	0.1	0.1	0.4	0.8	0.60
2.	V-02	1.4	5.8	3.6	2.3	5.4	3.85	0.1	0.2	0.15	0.1	0.3	0.2	1.2	6.7	3.95
3.	V-03	0.6	0.8	0.7	0.7	1.3	1.00	0.1	0.2	0.15	0.1	0.2	0.15	0.4	0.8	0.60
4.	V-04	0.2	0.6	0.4	0.6	1.1	0.85	0.1	0.2	0.15	0.1	0.2	0.15	0.2	0.6	0.40

b) **VOC Values recorded in PPM during the time at 09.30 AM to 03.45PM on 08.12.2021**

Sl No	Sample code	Parameters (value in ppm)														
		Acetone			Methanol			Benzene			Chloro benzene			Toluene		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
	In the Industrial Premises:															
1.	V-01	1.2	2.4	1.8	2	4.8	3.4	0.1	0.2	0.15	0.1	0.1	0.1	0.6	1.2	0.9
2.	V-02	1.2	5.9	3.55	2.6	5.5	4.05	0.1	0.2	0.15	0.1	0.1	0.1	0.8	6.2	3.5
3.	V-03	0.4	0.8	0.6	0.6	1.6	1.1	0.1	0.1	0.1	0.1	0.2	0.15	0.3	0.6	0.45
4.	V-04	0.3	0.5	0.4	0.3	1.2	0.75	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.7	0.5

II) **VOC monitoring outside industry's premises:**

The details of monitoring of Volatile Organic Compounds (VOC) carriedout outside the industry's premises at i)V– 07: Near Sri K.Tirupal Reddy house, Kodimi(V) approx. distance 0.9 Km from the industry on North-East direction;ii)V – 08 :Near Gramasachivalayam building, Rachanapalli (V) approx. distance 1.1Km from the industry on East direction;iii)V – 09 : Near Chiranjeevi Reddy Information Technology, Rachanapalli(V) approx. distance 0.7 Km from the industry on West direction& iv)V – 10 : Near Susheela Reddy B.Ed, College, Rachanapalli(V), approx. distance 0.4 Kms from the industry on North West direction

a) **VOC Values recorded in PPM during the time 10.20 PM to 04.45 PM & 10.20 PM to 11.40 PM on 07.12.2021.**

Sl No	Sample code	Parameters (value in ppm)														
		Acetone			Methanol			Benzene			Chloro benzene			Toluene		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1.	V-07	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2.	V-08	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
3.	V-09	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4.	V-10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

b) **VOC Values recorded in PPM during the time at 09.30 AM to 03.45 PM on 8.12.2021**

Sl No	Sample code	Parameters (value in ppm)														
		Acetone			Methanol			Benzene			Chloro benzene			Toluene		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
5.	V-07	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6.	V-08	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
7.	V-09	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8.	V-10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

BDL – Below Detectable Limit (Minimum detectable limit of monitoring instrument is 0.1 PPM)

III) Inferences from the monitorings conducted :

a. The Stack and Ambient Air Quality Monitoring conducted within the industry's premises shows that the parameters viz., SPM, SO_2 and NO_x are within the stipulated standards.

b. The VOCs monitored within the industry premises shows the VOC values were recorded in the range of 0.15 to 3.95 PPM indicating that the characteristic odour of organic compounds in the industry's premises, which may be due to the solvent losses.

c. The VOCs monitored in the nearby villages viz., Kodimi(V), Near Gramasachivalayam building and Near Susheela Reddy B.Ed, College at Rachanapalli (V). The aerial distance is 0.9, 1.1 and 0.4 Kmsfrom the industry, shows that the VOCs were within the Below Detectable Limit.

d. The VOCs monitored in the premises of CRIT College, Rachanapalli (Complainant premises) at an aerial distance of 0.7 Km from the industry, showthat the VOCs were within the Below Detectable Limit. The VOC monitoring reports are enclosed at **Annexure - 7.**

26. Recovery of Solvents in the distillation / recovery process and odour control measures:

The Hon'ble NGT vide Order dated 09.09.2021 directed *"to enhance solvent recovery and maintain Work Zone Standards, Standards for channelized VOC emissions may be achieved. The industry may operate with duly approved On and off – site emergency plans under MSIHC Rules, 1989. SPCB may apply the SoP for spent solvent recovery with such conditions as may be necessary for protection of environment and public health".*

1) The industry is utilizing solvents viz., Toulene in Stage –2 of Rafoxanide and Stage – 1 of Fenbendazole and Niclosamide, acetone&Methonalfor purification of products, MonoChloro Benzene in Stage –2 & 3 of Oxyclozanide, n-hexane in Stage – 2 of Rafoxanide.
2) The industry has 4 Nos.of Vertical Solvent Storage tanks for the storage of solvents viz., Methanol – 20 KL, Acetone – 20 KL, Monochloro Benzene – 20 KL, Toluene – 20 KL. The industry has connected the vents of the each of these Solvent Storage tanks to the 4 Nos.of condensers (of 6 Sq.Mtrs capacity).
3) As per the recommendation of the expert committee, the industry has proposed to provideda separate cooling tower of capacity 50 TR and proposes to add ice in the cooling tower to increase efficiency of the vapor condensation in the condensers. The industry has to install temperature indicators for the cooling tower for recording inlet and outlet temperatures.
4) The industry is having 2 Nos.of distillation columns of height 15 mtrs each for recovering Toulene and Acetone. The other solvents viz, Methanol, Mono Chloro Benzene and n-hexane are recovered using simple distillation in reactor.

5) The distillation columns were provided with primary condenser (water circulation), secondary condenser (with chilled brine circulation).As per the recommendation of the expert committee, the industry has provided candy filter with granulated carbon absorption system for the final vent of the two distillation columns to control odour nuisance.

6) Also, as per the recommendation of the expert committee,the industry has provided 100 Liters of closed collection tank for collection of sampling solution for each of the two distillation columns.

I. Status of implementation of CPCB Standard Operating Procedures for utilization of spent solvent for recovery of solvents (revised in Feb, 2021):

a) The industry is transferring the spent solvents from the production blocks to the Mother Liquor storage tanks using transfer pumps.

b) The industry has 4 Nos.of Vertical Solvent Storage tanks for the storage of solvents viz., Methanol – 20 KL, Acetone – 20 KL, Monochloro Benzene – 20 KL, Toluene – 20 KL and vents of the each of these Solvent Storage tanks were connected to the 4 Nos.of condensers (of 6 Sq.Mtrs capacity).

c) All the vehicles are fitted with spark arrestor at the main gate while entering into the premises.

d) The vent of the condenser for the distillation columns is more than 10 mtrs above the nearby roof top (roof top of Production Block-B).

e) The industry has provided candy filter with granular carbon absorption system for the final vent of the two distillation columns.

f) The industry has provided Laboratory with gas Chromatography for the analysis of the solvents.

g) The industry has provided full-fledged fire hydrant system with dedicated pipe line with water reservoir of capacity 1,40,000 Ltrs, fire extinguishers, etc,.

h) The industry has to obtain License from Petroleum and Explosive Safety Organization (PESO) for the storage of solvents. The unit representative has informed that they will obtain the approval from PESO within 3 months.

i) The distillation residue is collected in HDPE bags and then disposed to M/s. GM Eco Services, Kadapa District for co-processing in cement industries. The industry has disposed 13.5 Tones of distillation residue to M/s. GM Eco services from Aug, 2021 to Dec, 2021.

j) The condensate from the distillation column is being sent to Low TDS effluent collection tank for further treatment in Biological ETP followed by RO system.

k) The industry has obtained Public Liability Insurance from 16.05.2021 to 15.05.2022.

l) During inspection the solvent loses for the period from Aug, 2021 to Nov, 2021 were verified and the details are as follows:

Month	Name of the solvent	Quantity of Spent Solvent generated during the month (in Ltrs)	Quantity of Solvent recovered during the month (in Ltrs)	Quantity of solvent loss during the month (in Ltrs)	Percentage of Solvent recovered during the month
Aug, 2021	Oxyclozanide Acetone	11,520	10,930	590	94.88%
	Oxyclozanide MCB	16,000	15,160	840	94.75%
	Oxyclozanide methanol	40,000	38,090	1,910	95.23%
	Rafoxanide methanol	6,000	5,650	350	94.17%
	Fenbenzole methanol	12,000	11,320	680	94.33%
	Niclosamide methanol + Toluene	9,000	8,480	520	94.22%
Sep, 2021	Oxyclozanide Acetone	9,600	9,130	470	95.1%
	Oxyclozanide MCB	19,200	18,210	990	94.84%
	Oxyclozanide methanol	60,000	57,250	2,750	95.42%
	Rafoxanide methanol	18,000	16,970	1,030	94.28%
	Niclosamide methanol + Toluene	15,000	14,190	810	94.60%
Oct, 2021	Oxyclozanide Acetone	13,440	12,800	640	95.2%
	Oxyclozanide MCB	19,200	18,260	940	95.10%
	Oxyclozanide methanol	52,000	49,500	2,500	95.92%
	Rafoxanide methanol	15,000	14,260	740	95.07%
	Fenbenzole methanol	9,000	8,570	430	95.22%
	Niclosamide methanol + Toluene	15,000	14,310	690	94.40%
Nov, 2021	Oxyclozanide Acetone	9,600	9,160	440	95.42%
	Oxyclozanide MCB	16,000	15,240	760	95.25%
	Oxyclozanide methanol	32,000	30,610	1,390	95.65%.
	Rafoxanide methanol	15,000	14,350	650	95.67%
	Niclosamide methanol + Toluene	9,000	8,600	400	95.56%

From the above statement, the solvent recovery for the period from Aug, 2021 to Nov, 2021 is in the range of 94.1% to 95.9%.

II. <u>Work Zone Standards:</u>

a) During inspection, the work zone concentration for the solvent used are being measured by officials of Zonal Laboratory, Kurnool using Handheld VOC detector – PID detector, Make: Tiger LT and the work zone solvent concentration are as follows:

S.No	Substance	Time-weighted average (TWA) in PPM	Monitored value in PPM range
1.	Toluene	100	22.3 to 44.1

2.	Acetone	1000	36.6 to 74.5
3.	Methanol	200	66.4 to 100.2

III. Standards for channelized VOC emissions:

During inspection, the VOCs monitored at the outlet of the vent condenser solvent distillation columns was measured using handheld VOC detector – PID detector, Make: Ion science, Model: Tiger LT and was recorded as 3.34 (avg. value) as against standard of 20 PPM.

27. State-of-Art Odour Control Systems:

i) The Hon'ble NGT has passed an order dated September 09, 2021 directed that "*The state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health*".

ii) The A.P. Pollution Control Board vide letter dated October 18, 2021 requested the Indian Institute of Chemical Technology, Hyderabad and also Department of Chemical Engineering,Jawaharlal Nehru Technological University (JNTU), Anantapuramu to identify the sources odour and also to suggest state-of-art odour control system required to be provided by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District.

iii) On the request of the APPCB, the following officials Indian Institute of Chemical Technology, Hyderabad and Department of Chemical Engineering, Jawaharlal Nehru Technological University (JNTU), Anantapuramu visited M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District and surrounding area on November 09, 2021 to identify the sources of odour from the industry and also to suggest measures for odour control from the industry.

Indian Institute of Chemical Technology (IICT), Hyderabad	**Jawaharlal Nehru Technological University (JNTU), Anantapuramu**
Dr. A. Gangagni Rao Chief Scientist Council of Scientific and Industrial Research (CSIR) Indian Institute of Chemical Technology (IICT),Hyderabad	Prof. S.V. Satyanarayana Professor Department of Chemical Engineering Jawaharlal Nehru Technological University, Anantapuramu
Dr. S. VenkataMohan Sr. Pr. Scientist Council of Scientific and Industrial Research (CSIR) Indian Institute of Chemical Technology (IICT), Hyderabad	

iv) The expert team from IICT, Hyderabad has suggested additional 11 Nos.of state-of-art odour control systems to further control odour from the industry. A copy of the report of expert committee is enclosed as **Annexure – 8.**

v) The APPCB vide Order dated 16.11.2021 communicated the report of the expert committee of IICT, Hyderabad to M/s. Siflon Drugs and directed the industry to implement the recommendations of the expert committee within 3 weeks and to implement any other additional measures necessary to control odour and to ensure recover of solvents not less than 95%. A copy of the same is enclosed as **Annexure – 9.**

vi) The latest compliance of the industry to the state-of-art odour control systems suggested by expert team are as follows:

S.No	Additional state-of-art odour control systems suggested by expert team	Compliance
1.	Shall provide common adsorption column for the scrubbers provided in production block – B & C and the vents from the two scrubbers (water and caustic) shall be connected to the common adsorption column system with granular activated carbon specific to gaseous adsorption	Complied. The industry has provided candy filter with granulated carbon adsorption system for the vents of the Scrubbers provided at production Blocks.
2.	Shall provide proper connections without bypassing of adsorption column provided for the vent of the tertiary condenser provided for the solvent distillation column.	The industry has provided candy filter with granular activated carbon adsorption system for the vents of the condenser provided for the two solvent distillation columns.
3.	Shall connect the vent of the mother liquor storage tank (day tank) to the adsorption column and shall use the granulated activated carbon in the adsorption column to increase the efficiency of the adsorption.	The industry has connected the condenser vent of mother liquor storage tanks (day tank) to the candy filter with granular carbon adsorption system.
4.	The sampling solutions from the solvent distillation columns should be collected in a closed container and shall be transferred to the ML storage tank by gravity in a closed loop.	The industry has provided 100 Liters of closed collection tank for collection of sampling solution for each of the two distillation columns.
5.	Shall provide proper railing in all stairs of distillation facility in order to avoid any accidents.	The industry has provided railing in all stairs of the distillation column.
6.	Shall use cold water by adding ice blocks in the Cooling tower provided for the vent condenser of solvent storage tanks and also to observe the inlet and outlet temperature by providing the thermometer.	Not Complied. During inspection, it was observed that the industry was in process of installation of separate cooling tower of capacity 50 TR for the condensers provided to the solvent storage tanks. The industry has to install temperature indicators for the cooling tower for recording inlet and outlet temperatures.
7.	Shall pass the vent of the scrubber provided for the ATFD outlet through appropriately designed activated carbon adsorption system.	Complied. The industry has provided candy filter with granular carbon adsorption for the vent of ATFD scrubber outlet.
8.	Shall completely cover the Equalizing tanks (for both high and low TDS effluents) and biological treatment systems (aeration tanks) with powder coated sheets and the vents of the tanks shall be connected to scrubbing system.	Complied. The industry has covered Equalizing tanks (for both high and low TDS effluents) and also aeration tanks of the biological ETP with powder coated sheets. The industry has provided suction hood (with ID fan of capacity 5 HP) for HTDS & LTDS Equalizing tanks and connected to scrubber. The vent of the scrubber is provided with candy filter with granular carbon adsorption system. The industry has provided suction hood (with ID fan of capacity – 5 HP) for the aeration tanks of biological ETP. The industry has provided scrubber for the aeration tank and vent of the scrubber is provided with candy filter granulated carbon adsorption system.

9.	Shall segregate the Sulphur powder bags in raw material warehouse and to store them in a separate closed room or enclosure with proper exhaust arrangement connected to scrubbing system.	Partially complied. The industry has provided separate room for the storage of Sulphur powder bags. The industry has to provide exhaust arrangement connected to scrubbing system.
10.	Shall frequently check for leakages in gaskets of all the flange joints and replace accordingly.	The unit is regularly checking the leakages of all the flange joints.
11.	Shall provide appropriate clamps to the metal pipes connected with HDPE tubing for avoiding leakages.	The industry has replaced the HDPE pipe with MS pipe at Solvent storage tank area and the industry has to replace the HDPE pipes with MS pipes at Effluent Treatment area to avoid leakages. The photographs depicating the implementation of recommendations of expert committee is enclosed as **Annexure – 10.**

28. Remarks:

1) The industry is manufacturing only Group - B products and is manufacturing only 04 Nos. of the 9 Nos.of permitted products in Group – B. As per the production records, the industry has manufactured Oxyclozanide – 159.08 Kgs/day (as against permitted 166.67 Kgs/day), Rafoxanide – 66.68 Kgs/day (as against permitted 66.67 Kgs/day), Niclosamide – 66.32 Kgs/day (as against permitted 70 Kgs/day) and Fenbendazole - 27.48 Kgs/day (as against permitted 33.33 Kgs/day) during the period from Aug, 2021 to Nov, 2021.

2) The industry is manufacturing the consented products within the permitted capacity.

3) The industry has implemented 9 of the state-of-art odour control system recommended by expert team of IICT, Hyderabad and JNTU, Ananthapuramu and has to implement the other 2 recommendations of the expert team i.e., providing of separate cooling tower for the condensers of solvent storage tanks and providing exhaust arrangement connected to scrubbing system for the sulphur storage room.

4) During inspection, the solvent losses from the recovery systems was found to be in the range of 4.1 to 5.9 % during the period from Aug, 21 to Nov, 21. There is a reduction in solvent losses from 5.02 - 7.15 % (which was reported for the period from Mar, 2021 to Jun, 2021) to 4.1 to 5.9 % (during the period from Aug, 2021 to Nov, 2021).

5) From the VOC monitoring conducted by the Board Officials within industry's premises, in the nearby villages and in the Complainant's premises, it was observed that the VOC's were recorded Below the detectable levels (BDL) in the nearby villages and also in the complainant's premises. However, the VOC's were recorded in the industry's premises in the range of 0.15 to 3.95 PPM which may be due to the solvent losses.

6) The industry has stored about 38.83 Tons of Hazardous waste in the premises and the industry has to immediately dispose the Hazardous waste to TSDF, Nellore / Authorized cement industries for co-processing.

7) The industry has complied with the conditions stipulated in the directions issued by the Board except implementation of the 2 Nos.of state-of-art odour control system of total 11 Nos.of recommendations of expert team of IICT, Hyderabad and JNTU, Ananthapuramu.

8) The Hon'ble NGT in its Order dated 09.09.2021 stated the following

"Let a further action taken report and status of compliance as on November 30,2021 be ascertained and remedial action taken by the State PCB in exercise of its statutory powers, following due process of law. The State PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health"

In view of the orders of the Hon'ble NGT Order dated 09.09.2021, it is submitted that the industry may be called for review before the Task Force Committee for issue of suitable directions to the industry.

This is submitted for favour of information and necessary action.

Yours faithfully,

MBS Sankara Rao,
EE, Regional Office,
Ananthapuramu

M Bujjibabu,
JSO, Zonal Laboratory,
Kurnool

M.V.N. Prasad,
SEE, Zonal Office,
Kurnool

ANDHRA PRADESH POLLUTION CONTROL BOARD

D.No.33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre,
Chalamalavari Street, Kasturibaipet, Vijayawada - 520010

CONSENT & AUTHORISATION ORDER

Consent Order No : APPCB/KNL/ATP/1060/ HO/CFO&HWA/2018- Date: 21 . 06.2018

CONSENT is hereby granted for Operation under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof and Authorisation under Rule 6 of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016 and the rules and orders made there under (hereinafter referred to as 'the Acts', `the Rules') to:

M/s Siflon Drugs,
Sy.No.25/4, Rachanipalli (V),
Anantapuram District.
E-mail : siflonaccts@rediffmail.com

(Hereinafter referred to as 'the Applicant') authorizing to operate the industrial plant to discharge the effluents from the outlets and the quantity of emissions per hour from the chimneys as detailed below:

i) Out lets for discharge of effluents:

Outlet No.	Outlet Description	Max Daily Discharge	Point of Disposal
1	Process &Washings (6.80 KLD), boiler blow down(1.80 KLD), cooling bleed off (0.50 KLD)	9.1 KLD	• Stripper condensate shall be sent to TSDF/Cement plants for co processing. • Condensate from MEE (1.5 TPH) & ATFD (1.5 TPH) shall be sent to secondary ETP followed by RO system (1.0 Kl/Hr). • RO permeate shall be reused as cooling makeup and RO rejects shall be sent to MEE • Salts from MEE & ATFD shall be sent to TSDF.
2	Domestic effluents	0.85 KLD	Septic tank followed by soak pit

ii) Emissions from chimneys:

Chimney No.	Description of Chimney
1	Attached to Briquette/coal fired boiler of capacity 4.0 TPH.
2	Attached to Briquette/coal fired boiler of capacity 3.0 TPH.
3	Attached to Scrubbers - 4Nos.
4	Attached to 250 KVA DG set
5	Attached to 500 KVA DG set

iii) HAZARDOUS WASTE AUTHORISATION (FORM – II) [See Rule 6 (2)]:

M/s. Siflon Drugs, Sy.No.25/4, Rachanipalli (V), Anantapuram District hereby granted an authorization to operate a facility for collection, reception, storage, treatment, transport and disposal of Hazardous Wastes namely:

- **HAZARDOUS WASTES WITH DISPOSAL OPTION:**

S. No.	Name of the Haz.waste	Quantity of Haz waste	Stream	Disposal Option
1.	MEE Salts/ETP Sludge	234.95 Kgs/day	35.3 of Schedule-I	Shall be sent to TSDF, Parawada for secured land filling.
2	Iron Sludge	78.71 Kgs/day	28.1 of Schedule-I	Shall be sent to Authorised Cement industries for co-processing / TSDF.
3	Organic / solvent residue	255.89 Kgs/day	20.3 of Schedule-I	
4	Spent carbon	22.81 Kgs/day	28.3 of Schedule-I	

- **Hazardous waste with Recycling option**

1.	Waste oils & Grease	25 Lts/annum	5.1 of Schedule-I	Authorized re-processors / recyclers

This consent is valid for manufacture of quantities of each product as mentioned below only.

S.No.	Name of the products	Quantity
	Group - A	
1.	Rafoxanide	100 Kg/day
2.	Closantel Base	200 Kg/day
3.	Praziquantel	100 Kg/day
4.	Clorsulon	100 Kg/day
5.	Butaphosphan	40 Kg/day
6.	Firocoxib	10 Kg/day
	Total Group - A	**550.0 Kg/day**
1.	Oxyclozanide	166.67 Kg/day
2.	Niclosamide	70 Kg/day
3.	Albendazole	66.67 Kg/day
4.	Fenbendazole	33.33 Kg/day
5.	Closantel Sodium	50 Kg/day
6.	Closantel Base	100 Kg/day
7.	Triclabendazole	66.67 Kg/day
8.	Rafoxanide	66.67 Kg/day
9.	Enrofloxacin	40 Kg/day
	Total Group - B	**660.00 Kgs/day**

Note: The industry shall manufacture any one group of products at any given point of time.

This order is subject to the provisions of `the Acts' and the Rules' and orders made there under and further subject to the terms and conditions incorporated in the schedule A, B & C enclosed to this order.

This combined order of consent & Hazardous Waste Authorisation shall be valid for a period ending with the **30.04.2022**

Bandla Siva Sankar Prasad
Digitally signed by Bandla Siva Sankar Prasad
Date: 2018.06.22 13:11:12 +05'30'

CHAIRMAN

To
M/s Siflon Drugs,
Sy.No.25/4, Rachanipalli (V),
Anantapuram District - 515004.

Copy to:
1. The JCEE, Zonal Office, Kurnool for information.
2. The Environmental Engineer, Regional Office, Kurnool for information and necessary action.

S C H E D U L E – A

1. Any up-set condition in any industrial plant / activity of the industry, which result in, increased effluent / emission discharge and/ or violation of standards stipulated in this order shall be informed to this Board, under intimation to the Collector and District Magistrate and take immediate action to bring down the discharge / emission below the limits.
2. The industry should carryout analysis of waste water discharges or emissions through chimneys for the parameters mentioned in this order on quarterly basis and submit to the Board.
3. All the rules & regulations notified by Ministry of Law and Justice, Government of India regarding Public Liability Insurance Act, 1991 should be followed as applicable.
4. The industry should put up two sign boards (6x4 ft. each) at publicly visible places at the main gate indicating the products, effluent discharge standards, air emission standards, hazardous waste quantities and validity of CFO and exhibit the CFO order at a prominent place in the factory premises.

5. Not withstanding anything contained in this consent order, the Board hereby reserves the right and powers to review / revoke any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Acts by the Board.
6. The applicant shall submit Environment statement in Form V before 30th September every year as per Rule No.14 of E(P) Rules, 1986 & amendments thereof.
7. The applicant should make applications through Online for renewal of Consent (under Water and Air Acts) and Authorization under Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016 at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts and detailed compliance of CFO conditions for obtaining Consent & Haz & Other Wastes Authorization of the Board.
8. The industry should immediately submit the revised application for consent to this Board in the event of any change in the raw material used, processes employed, quantity of trade effluents & quantity of emissions. Any change in the management shall be informed to the Board. The person authorized should not let out the premises / lend / sell / transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.
9. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to Appellate authority constituted under Section 28 of the Water(Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air(Prevention and Control of Pollution) Act, 1981.

SCHEDULE - B

WATER POLLUTION:

1. The source of water is APIIC supply. The following is the permitted water consumption:

Sl. No	Purpose	Quantity (KLD)
1.	Process &Washings	8.8
2.	Boiler feed	10
3.	Cooling blow down	2.0
4.	Gardening	1.00
5.	Domestic	2.00
	Total	**23.8**

2. The industry shall provide separate flow meters within one month for assessing the quantity of water used for the above purposes.
3. The industry shall provide flow meters with totalizers at the inlet and outlet of Stripper, RO system and outlet of ATFD condensate by the end of July, 2018 .
4. The industry shall provide Secondary Effluent Treatment Plant, within two months(i.e, before 15the of August 2018) as committed by the industry vide lr. Dt.20.06.2018 to achieve Zero Liquid Discharge (ZLD).
5. The industry shall not discharge any waste water outside the premises and shall maintain Zero Liquid Discharge system.
6. The industry shall provide containers detoxification facility by the end of July 2018. . Container & Container liners shall be detoxified at the specified covered platform with dyke walls and the wash wastewater shall be routed to low TDS collection tank for treatment and disposal.

AIR POLLUTION:

7. The emissions shall not contain constituents in excess of the prescribed limits mentioned below.

Chimney No.	Parameter	Emission Standards
1	Particulate Matter	115 mg/Nm^3
2	Particulate Matter	115 mg/Nm^3
3	HCl	35 mg/Nm^3

8. The industry shall provide separate stacks and air pollution control equipments((Multi cyclone dust collectors) to the 4 TPH and 3 TPH boilers as agreed by the proponent during the CFE committee meeting held on 10.01.2018.

9. The industry shall comply with ambient air quality standards of PM10 (Particulate Matter size less than 10μm) - 100 μg/ m3; PM2.5 (Particulate Matter size less than 2.5 μm) - 60 μg/ m3; SO2 - 80 μg/ m3; NOx - 80 μg/m3, outside the factory premises at the periphery of the industry.

   Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009.
   Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A)
   Night time (10 PM to 6 AM) - 70 dB (A)

10. The industry shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Act Rules. In case of DG sets of capacity more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.

GENERAL:

11. The industry shall not manufacture any product, other than those mentioned in this order, without CFE & CFO of the Board. The industry shall not increase the capacity beyond the permitted capacity mentioned in this order, without obtaining CFE & CFO of the Board.
12. The industry shall install and operate multi stage scrubbers for scrubbing of process emissions at all emission sources. The details of chemicals consumption used in the scrubber should be recorded and kept accessible for the inspecting officials of the Board.
13. The industry shall provide data logger facility for VOC.
14. The industry shall provide online pH meter with data logger facility to the scrubbers by the end of July, 2018.
15. There shall not be any spillages / discharges of chemicals / effluents on ground. The drums containing chemicals & wastes should be stored on elevated platform provided with leachate/spillages collection pit. In no case the drums should be stored on naked ground.
16. The industry shall ensure implementation of requisite measures to prevent air pollution, fugitive emissions & odour nuisance in the surrounding area.
17. The industry shall discard the use Solar Evaporation pond immediately.
18. The industry shall maintain the following records and the same shall be made available to the inspecting officers of the Board:
    a. Daily production details (ER-1 Central Excise Returns).
    b. Characteristics of effluents and emissions.
    c. Quantity of Effluents generated, evaporated in MEE, recycled/reused.
    d. Log Books for pollution control systems.
    e. Hazardous/non hazardous solid waste generated and disposed.
    f. Manifest copies of effluents / hazardous waste.
    g. Inspection book.

19. The industry shall dispose solid waste (NON HAZARDOUS) as follows:

S. No.	Name of the waste	Quantity	Disposal Option
1.	Ash	1.5 TPD	Shall be sent to the brick manufacturers.

20. The industry shall submit compliance report on the conditions mentioned in the consent order every 6 months to the Regional Office/Zonal Office.
21. The industry shall comply with the Task Force directions issued by the Board vide order dt. 02.04.2017.
22. The industry shall comply with the conditions stipulated in the CFE (Change of product mix) order dt.30.05.2018.
23. The industry shall develop green belt in an area of 1.85 acres in addition to existing green belt of 2.5 acres in the ensuing monsoon so that the total green belt shall not be less than 33% of the total area.

SCHEDULE – C

[See rule 6(2)]

[CONDITIONS OF AUTHORISATION FOR OCCUPIER OR OPERATOR HANDLING HAZARDOUS WASTES]

1. The operator should follow the Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016 notified by the Ministry of Environment & Forests, Government of India.
2. The industry shall not store hazardous waste for more than 90 days as per the Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016.
3. The industry shall store Used / Waste Oil and Used Lead Acid Batteries in a secured way in their premises till its disposal to the manufacturers / dealers on buyback basis.
4. The industry shall maintain 6 copy manifest system for transportation of waste generated and a copy shall be submitted to concerned Regional Office of APPCB. The driver who transports Hazardous Waste should be well acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) Card.
5. The industry shall maintain proper records for Hazardous Wastes stated in Authorisation in FORM-3 and file annual returns in Form- 4 as per Rule 20(2) of the Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016.

Bandla Siva Sankar Prasad

Digitally signed by Bandla Siva Sankar Prasad
Date: 2018.06.22 13:11:39 +05'30'

CHAIRMAN

To
M/s Siflon Drugs,
Sy.No.25/4, Rachanipalli (V),
Anantapuram District - 515004.

Annexure - 2

Photograph of the online effluent monitoring system provided at the outlet of RO

V3 AUTOMATION

VER 20170927 - Hemera Analyzer Testing Report

Hemera Analyzer Testing Report

Customer Company:	Siflon Drugs, Anantapur	Date:	10-11-2021		
Equipment: (Please tick and state model and serial number)	Analyzer				
	Model Number:	L600			
	Serial Number:	IN2002-027A	Software Version:	C10.00.00	
Basic information of Analyzer	☐ H2S	☐ Ammonia	☑ pH		
	☐ Oil in water	☑ TSS(Total suspended solid)	☐ DO		
	☐ Chlorine	☑ COD(Chemical Oxygen Demand)			
	☑ Others: BOD				
Checking list of Analyzer	☐ Keys	Power supply cable	☑ CE board		
	☑ Brackets	Screws of brackets	☑ Stickers		
	☑ Pictures	Certifications	☐ Protect stripping pot		
	☐ Others:				

Hemera Analyzer settings

Settings I							
Gas lamp index		Allow abs	0	IS Start point	226	IS board version	B
Liquid lamp idx		Zero cycle alone	1	IS nb pixel	256	IS ADC mode	1
Settings II							
Allow dble meas.	0	H2S with pH	0	Allow multiplex.	0		
Dble meas. G/L	0	Auto calib mode	0	Modbus Master	0		
Settings III							
Allow USB store	1	Cleaning/Zeroing	0				
Allow SD store	0	Digits after"."	2				

Additional Remarks	Check done by V3:
The Instruments Calibration/Testing is done with Reference to Lab Samples and found inline	 Authorized Signature Date: 10-11-2021

V3 AUTOMATION

VER 20170927 - Hemera Analyzer Testing Report

Hemera Analyzer Testing Report

Customer Company:		Siflon Drugs, Anantapur		Date:		10-11-2021	
Hemera Analyzer COD parameter							
COD Parameters		☐ Hold on		☑ Hold off			
Label	COD	Range	0-1000	IN2002-027A	mg/L	Digits	2
COD Linearisation		☑ Hold on		☐ Hold off			
a	0	b	1	c	0		
COD FT		☐ Hold on		☑ Hold off			
F	0.1	W	3	λ	190		
COD configuration							
Abs coef.	100	Lamp Idx	1	λ1	236	Δ1	2
T°C coef.	1	T°C ref.	20	λ2	530	Δ2	2
COD signal settings		☐ Floating average ON		☑ Floating average OFF			
Spectra average	4	Starting point	223.40	Abs Zoom	10000	FloatAvg depth	2
Light integration	11	Resolution	0.616	Light delay	55	Light duration	12
Hemera Analyzer COD Communication							
4-20mA output		☑ On		☐ Off			
Channel	1	Range	0-1000				
Relay		☐ On		☑ Off			
Channel	-	Low	-	High	-		
RS485 - Modbus Slave		☑ On		☐ Off			
Component addres	30	Slave Id	0	Baud rate	0	Data bits	8
Parity	None	Stop bits	0				
Screen shutdown		☐ On		☑ Off			
Delay (minutes)	5						

Additional Remarks	Check done by V3:
The Instruments Calibration/Testing is done with Reference to Lab Samples and found inline	Authorized Signature ate: 10-11-2021

V3 AUTOMATION

VER 20170927 - Hemera Analyzer Testing Report

Hemera Analyzer Testing Report

Customer Company:		Siflon Drugs, Anantapur		Date:		10-11-2021	
Hemera Analyzer BOD parameter							
BOD Parameters		☐ Hold on		☑ Hold off			
Label	BOD	Range	0-1000	IN2002-027A	mg/L	Digits	2
BOD Linearisation		☑ Hold on		☐ Hold off			
a	0	b	1	c	0		
BOD FT		☐ Hold on		☑ Hold off			
F	0.1	W	3	λ	190		
BOD configuration							
Abs coef.	100	Lamp Idx	1	λ1	236	Δ1	2
T°C coef.	1	T°C ref.	20	λ2	290	Δ2	2
BOD signal settings		☐ Floating average ON		☑ Floating average OFF			
Spectra average	4	Starting point	223.40	Abs Zoom	10000	FloatAvg depth	2
Light integration	11	Resolution	0.616	Light delay	50	Light duration	10
Hemera Analyzer BOD Communication							
4-20mA output		☑ On		☐ Off			
Channel	1	Range	0-1000				
Relay		☐ On		☑ Off			
Channel	-	Low	-	High	-		
RS485 - Modbus Slave		☑ On		☐ Off			
Component address	25	Slave Id	0	Baud rate	0	Data bits	8
Parity	None	Stop bits	0				
Screen shutdown		☐ On		☑ Off			
Delay (minutes)	5						

Additional Remarks	Check done by V3:
The Instruments Calibration/Testing is done with Reference to Lab Samples and found inline	Authorized Signature Date: 10-11-2021

V3 AUTOMATION

VER 20170927 - Hemera Analyzer Testing Report

Hemera Analyzer Testing Report

Customer Company:		Siflon Drugs, Anantapur		Date:		10-11-2021	
Hemera Analyzer TSS parameter							
TSS Parameters		☐ Hold on		☑ Hold off			
Label	TSS	Range	0-1000	IN2002-027A	mg/L	Digits	2
TSS Linearization		☑ Hold on		☐ Hold off			
a	0	b	1	c	0		
TSS FT		☐ Hold on		☑ Hold off			
F	0.4	W	3	λ	188		
TSS configuration							
Abs coef.	100	Lamp Idx	1	λ1	290	Δ1	2
T°C coef.	1	T°C ref.	20	λ2	530	Δ2	2
TSS signal settings		☐ Floating average ON		☑ Floating average OFF			
Spectra average	4	Starting point	223.40	Abs Zoom	10000	FloatAvg depth	2
Light integration	11	Resolution	0.616	Light delay	50	Light duration	10
Hemera Analyzer TSS Communication							
4-20mA output		☑ On		☐ Off			
Channel	1	Range	0-1000				
Relay		☐ On		☑ Off			
Channel	-	Low	-	High	-		
RS485 - Modbus Slave		☑ On		☐ Off			
Component addres	20	Slave Id	0	Baud rate	0	Data bits	8
Parity	None	Stop bits	0				
Screen shutdown		☐ On		☑ Off			
Delay (minutes)	5						

Additional Remarks	Check done by V3:
The Instruments Calibration/Testing is done with Reference to Lab Samples and found inline	Authorized Signature Date: 10-11-2021

V3 AUTOMATION

VER 20170927 - Hemera Analyzer Testing Report

Hemera Analyzer Testing Report

Customer Company:	Siflon Drugs, Anantapur	Date:	10-11-2021

Hemera Analyzer Temp Calibration data

Temp Parameter		☐ Hold On		☑ Hold Off		
Label	Temp.	Unit	°C	IN2002-027A	2	
	☑ PT100	☐ Ph		☐ DO		
Temp Type of connection						
	☐ 2-wire / 4-wire	☑ 3-wire				
Temp Channel Number						
	☑ n°1	☐ n°2		☐ n°3		
Temp Linearisation		☐ Hold On		☑ Off		
a	0	b	1	c	0	

Hemera Analyzer Temp Communication

4-20mA output		☐ On		☑ Off			
Channel	0	Range	-				
Relay		☐ On		☑ Off			
Channel	-	Low	-	High	-		
RS485 - Modbus Slave		☑ On		☐ Off			
Component address	10	Slave Id	0	Baud rate	0	Data bits	8
Parity	None	Stop bits	1				
Screen shutdown		☑ On		☐ Off			
Delay (minutes)	6						

Additional Remarks	Check done by V3:
The Instruments Calibration/Testing is done with Reference to Lab Samples and found inline	 Authorized Signature Date: 10-11-2021

V3 AUTOMATION

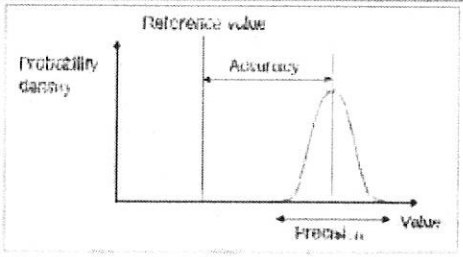
VER 20170927 - Hemera Analyzer Testing Report

Hemera Analyzer Testing Report

Customer Company:		Siflon Drugs, Anantapur			Date:		10-11-2021				
Hemera Analyzer Timing											
Timing											
Measurement Freq.		1	Unit	Min	☐ ON	☑ Off					
Cleaning Freq.		12.8	Unit	Hour	☐ ON	☑ Off	☐ Zeroing activation				
Chronogram (Zeroing)											
Chronogram (Zeroing)											
Description		Zero	IT0(I)								
Time (s)											
Digital output											
Air pump											
Chronogram (Sampling)											
Description	Cleaning	Ito	Sample	Buffer	Meas.(I)	ITS(I)	Purge				
Time (s)	30	16	10	0	0	16	0				
Digital output											
Sample pump			X								
Cleaning pump	X										

Additional Remarks	Check done by V3:
The Instruments Calibration/Testing is done with Reference to Lab Samples and found inline	 Authorized Signature Date: 10-11-2021

V3 AUTOMATION



English translation - French		
Accuracy	—	Fidélité
Precision	—	Répétabilité

N.b. In French, a precise measurement is faithful and repeatable

Values obtained (6 consecutive values are required for all% of the following range)

maximum value of range (ppm) 26

26ppm		0ppm		10ppm	
	26.92108		-0.000717		10.3542615
	26.544294		-0.064709		10.2093438
	26.295891		-0.172553		10.1138042
	26.518145		-0.168633		10.1992865
	26.706165		-0.130453		10.2716019
	26.774391		-0.080701		10.2978427

Standard concentration at 20% (ppm)	0
Standard concentration at 80% (ppm)	26

Repeatability (Precision)

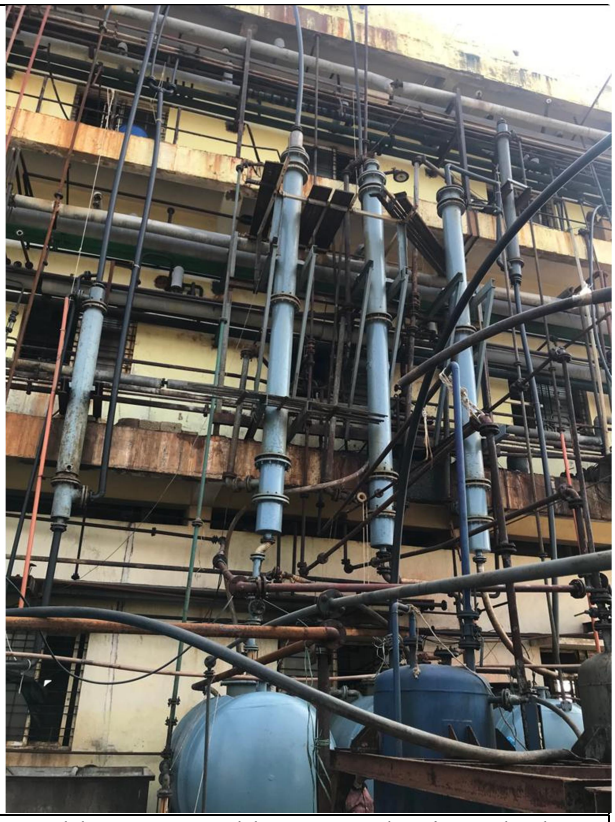
Formula - maximum (sigma (6 consecutive values at 20%); sigma (6 consecutive values at 80%))

Calculated repeatability (ppm)	0.084754505	Calculated repeatability (%)	0.325978866
Repeatability on 0 (ppm)	0.066819498	Repeatability on 10 (ppm)	0.084754505

Annexure - 3

Photographs of the scrubbers provided with candle filter with granulated carbon adsorption system for the vent of the scrubbers

Double stage scrubber at Productino Block – B



Double stage scrubber at Productino Block – C

Single stage scrubber at Productino Block – C

Date&Time (YYYY-MM-DD hh:mm:ss)	SCRUBBER 1 (pH)	SCRUBBER 2 (pH)	VOC (PPM)
01-08-2021 00:00	10.51	12.12	0.02
01-08-2021 01:00	10.57	12.13	0.15
01-08-2021 02:00	10.63	12.09	0.21
01-08-2021 03:00	10.67	12.1	0.17
01-08-2021 04:00	10.69	12.1	0.09
01-08-2021 05:00	10.71	12.1	0.34
01-08-2021 06:00	10.72	12.1	0.21
01-08-2021 07:00	10.74	12.1	0.14
01-08-2021 08:00	10.79	12.11	0.13
01-08-2021 09:00	10.81	12.11	0.19
01-08-2021 10:00	10.82	12.12	0.16
01-08-2021 11:00	10.83	12.13	0.12
01-08-2021 12:00	10.86	12.13	0.2
01-08-2021 13:00	10.87	12.15	0.14
01-08-2021 14:00	10.92	12.14	0.19
01-08-2021 15:00	10.97	12.15	0.24
01-08-2021 16:00	11.12	12.14	0.18
01-08-2021 17:00	11.16	12.15	0.16
01-08-2021 18:00	11.18	12.15	0.16
01-08-2021 19:00	11.26	12.13	0.13
01-08-2021 20:00	11.28	12.12	0.17
01-08-2021 21:00	11.31	12.13	0.06
01-08-2021 22:00	11.33	12.11	0.19
01-08-2021 23:00	11.33	12.05	0.09
02-08-2021 00:00	11.34	11.96	0.2
02-08-2021 01:00	11.33	11.95	0.15
02-08-2021 02:00	11.35	11.98	0.09
02-08-2021 03:00	11.36	11.95	0.15
02-08-2021 04:00	11.39	11.97	0.17
02-08-2021 05:00	11.47	11.98	0.12
02-08-2021 06:00	11.53	11.98	0.13
02-08-2021 07:00	11.63	12.02	0.15
02-08-2021 08:00	11.67	12.03	0.2
02-08-2021 09:00	12.11	11.91	0.15
02-08-2021 10:00	12.19	11.98	0.14
02-08-2021 11:00	12.29	12.04	0.13
02-08-2021 12:00	12.38	12.12	0.12
02-08-2021 13:00	12.46	11.98	0.13
02-08-2021 14:00	12.51	12.03	0.15
02-08-2021 15:00	12.64	12.06	0.22
02-08-2021 16:00	12.69	12.02	0.16
02-08-2021 17:00	12.78	12.05	0.1
02-08-2021 18:00	12.88	12.07	0.18
02-08-2021 19:00	12.84	12.07	0.14
02-08-2021 20:00	12.91	12.08	0.14
02-08-2021 21:00	12.96	12.72	0.14

02-08-2021 22:00	13.5	12.79	0.21
02-08-2021 23:00	10.14	12.77	0.18
03-08-2021 00:00	10.19	12.77	0.09
03-08-2021 01:00	10.27	12.75	0.14
03-08-2021 02:00	10.37	12.7	0.22
03-08-2021 03:00	10.38	12.69	0.17
03-08-2021 04:00	10.39	12.65	0.14
03-08-2021 05:00	10.41	12.57	0.12
03-08-2021 06:00	10.49	12.09	0.17
03-08-2021 07:00	10.54	11.58	0.11
03-08-2021 08:00	10.57	11.5	0.12
03-08-2021 09:00	10.58	11.47	0.11
03-08-2021 10:00	10.62	11.54	0.08
03-08-2021 11:00	10.63	11.72	0.16
03-08-2021 12:00	10.74	11.82	0.2
03-08-2021 13:00	10.84	11.98	0.2
03-08-2021 14:00	11.26	12.03	0.12
03-08-2021 15:00	11.16	12.13	0.23
03-08-2021 16:00	10.9	12.17	0.19
03-08-2021 17:00	10.68	12.17	0.13
03-08-2021 18:00	10.75	12	0.1
03-08-2021 19:00	10.6	12.02	0.24
03-08-2021 20:00	10.54	11.99	0.13
03-08-2021 21:00	10.5	11.87	0.21
03-08-2021 22:00	10.46	11.94	0.19
03-08-2021 23:00	10.43	11.69	0.18
04-08-2021 00:00	10.37	11.44	0.16
04-08-2021 01:00	10.28	11.53	0.15
04-08-2021 02:00	10.22	11.43	0.11
04-08-2021 03:00	10.14	11.22	0.21
04-08-2021 04:00	10.25	11	0.12
04-08-2021 05:00	10.36	10.79	0.1
04-08-2021 06:00	10.38	10.66	0.09
04-08-2021 07:00	10.43	10.52	0.19
04-08-2021 08:00	10.46	10.42	0.15
04-08-2021 09:00	10.51	10.4	0.16
04-08-2021 10:00	10.53	10.33	0.12
04-08-2021 11:00	10.55	10.32	0.21
04-08-2021 12:00	10.56	10.27	0.24
04-08-2021 13:00	10.56	10.23	0.13
04-08-2021 14:00	10.57	10.21	0.12
04-08-2021 15:00	10.57	10.18	0.18
04-08-2021 16:00	10.58	10.14	0.2
04-08-2021 17:00	10.6	10.1	0.14
04-08-2021 18:00	10.57	10.06	0.14
04-08-2021 19:00	10.55	10.99	0.17
04-08-2021 20:00	10.54	10.93	0.11
04-08-2021 21:00	10.49	11.19	0.18

M/S SIFLON DRUGS
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04-08-2021 22:00	10.46	11.29	0.18
04-08-2021 23:00	10.43	11.28	0.07
05-08-2021 00:00	10.38	11.24	0.15
05-08-2021 01:00	10.34	11.39	0.08
05-08-2021 02:00	11.55	11.49	0.07
05-08-2021 03:00	11.06	11.69	0.02
05-08-2021 04:00	11.1	11.77	0.02
05-08-2021 05:00	11.17	10.26	0.05
05-08-2021 06:00	11.26	10.28	0.03
05-08-2021 07:00	11.27	10.23	0.05
05-08-2021 08:00	11.29	10.17	0.03
05-08-2021 09:00	11.33	10.15	0.05
05-08-2021 10:00	11.36	10.13	0.1
05-08-2021 11:00	11.4	10.07	0.08
05-08-2021 12:00	11.43	10.03	0.07
05-08-2021 13:00	11.41	10.36	0.14
05-08-2021 14:00	11.46	10.43	0.12
05-08-2021 15:00	11.47	10.67	0.08
05-08-2021 16:00	11.45	10.81	0.15
05-08-2021 17:00	11.47	10.96	0.1
05-08-2021 18:00	11.46	11.2	0.18
05-08-2021 19:00	11.44	11.17	0.15
05-08-2021 20:00	11.39	11.33	0.2
05-08-2021 21:00	11.34	11.44	0.11
05-08-2021 22:00	11.24	11.44	0.16
05-08-2021 23:00	11.21	11.45	0.17
06-08-2021 00:00	11.2	11.55	0.21
06-08-2021 01:00	11.13	11.79	0.13
06-08-2021 02:00	11.1	11.87	0.15
06-08-2021 03:00	11.09	11.68	0.12
06-08-2021 04:00	11.07	11.79	0.16
06-08-2021 05:00	11.16	11.99	0.1
06-08-2021 06:00	11.17	12.12	0.09
06-08-2021 07:00	11.19	12.28	0.14
06-08-2021 08:00	11.26	12.31	0.1
06-08-2021 09:00	11.28	12.44	0.08
06-08-2021 10:00	11.31	12.57	0.14
06-08-2021 11:00	11.35	12.61	0.15
06-08-2021 12:00	11.33	12.79	0.09
06-08-2021 13:00	11.36	12.71	0.1
06-08-2021 14:00	11.36	12.88	0.15
06-08-2021 15:00	11.42	12.88	0.1
06-08-2021 16:00	11.41	12.76	0.07
06-08-2021 17:00	11.42	12.87	0.13
06-08-2021 18:00	11.45	12.91	0.18
06-08-2021 19:00	11.46	13.22	0.1
06-08-2021 20:00	12.95	13.36	0.13
06-08-2021 21:00	12.89	13.55	0.02

06-08-2021 22:00	12.87	10.15	0.2
06-08-2021 23:00	12.86	10.27	0.18
07-08-2021 00:00	12.84	10.31	0.25
07-08-2021 01:00	12.86	10.53	0.04
07-08-2021 02:00	12.83	10.54	1.2
07-08-2021 03:00	12.78	10.4	0.04
07-08-2021 04:00	12.75	10.52	0.04
07-08-2021 05:00	12.77	10.55	1.96
07-08-2021 06:00	12.83	10.5	0.16
07-08-2021 07:00	12.84	11.32	0.19
07-08-2021 08:00	12.85	11.33	0.15
07-08-2021 09:00	12.86	11.2	0.17
07-08-2021 10:00	12.87	11.27	0.26
07-08-2021 11:00	12.78	11.24	0.18
07-08-2021 12:00	12.69	12.14	0.06
07-08-2021 13:00	12.64	12.39	0.19
07-08-2021 14:00	12.59	12.22	0.09
07-08-2021 15:00	12.6	12.11	0.11
07-08-2021 16:00	12.58	12.13	0.13
07-08-2021 17:00	12.6	12.13	0.18
07-08-2021 18:00	12.58	12.21	0.14
07-08-2021 19:00	12.6	12.12	0.16
07-08-2021 20:00	12.57	12.37	0.17
07-08-2021 21:00	12.6	13.07	0.06
07-08-2021 22:00	12.57	13.17	0.22
07-08-2021 23:00	12.62	13.17	0.09
08-08-2021 00:00	12.6	13.28	0.21
08-08-2021 01:00	12.61	10.36	0.18
08-08-2021 02:00	12.64	10.33	0.02
08-08-2021 03:00	12.61	10.46	0.14
08-08-2021 04:00	12.65	10.58	1.08
08-08-2021 05:00	12.64	10.69	0.1
08-08-2021 06:00	12.66	10.78	0
08-08-2021 07:00	12.62	10.89	0.17
08-08-2021 08:00	12.73	10.84	0.19
08-08-2021 09:00	12.72	11.07	0.24
08-08-2021 10:00	12.68	11.13	0.15
08-08-2021 11:00	12.66	11.11	0.13
08-08-2021 12:00	12.67	11.12	0.16
08-08-2021 13:00	12.73	11.13	0.16
08-08-2021 14:00	12.68	11.11	0.15
08-08-2021 15:00	12.72	11.38	0.14
08-08-2021 16:00	12.73	11.43	0.2
08-08-2021 17:00	12.72	11.58	0.13
08-08-2021 18:00	12.72	12.11	0.11
08-08-2021 19:00	12.72	12.12	0.05
08-08-2021 20:00	12.68	12.11	0.15
08-08-2021 21:00	12.63	12.25	0.17

08-08-2021 22:00	12.67	12.37	0.15
08-08-2021 23:00	12.67	12.42	0.19
09-08-2021 00:00	12.66	12.54	0.02
09-08-2021 01:00	12.65	12.55	0.06
09-08-2021 02:00	12.64	12.76	0.11
09-08-2021 03:00	12.58	12.93	0.14
09-08-2021 04:00	12.59	13.04	0.12
09-08-2021 05:00	12.58	13.27	0.14
09-08-2021 06:00	12.56	13.36	0.06
09-08-2021 07:00	12.57	13.44	1.15
09-08-2021 08:00	11.18	13.48	1.15
09-08-2021 09:00	11.21	13.55	1.15
09-08-2021 10:00	11.38	13.44	0.17
09-08-2021 11:00	11.48	13.25	0.19
09-08-2021 12:00	11.55	13.46	0.07
09-08-2021 13:00	11.53	13.37	0.21
09-08-2021 14:00	11.67	13.39	0.1
09-08-2021 15:00	11.75	13.59	0.14
09-08-2021 16:00	11.78	13.53	0.13
09-08-2021 17:00	11.79	13.52	0.13
09-08-2021 18:00	11.83	13.5	0.07
09-08-2021 19:00	11.81	13.61	0.16
09-08-2021 20:00	11.87	10.4	0.11
09-08-2021 21:00	11.94	10.45	0.12
09-08-2021 22:00	12.16	10.37	0.17
09-08-2021 23:00	12.25	10.27	0.21
10-08-2021 00:00	12.16	10.32	0.2
10-08-2021 01:00	12.2	10.41	0.14
10-08-2021 02:00	12.31	10.57	0.14
10-08-2021 03:00	12.28	10.69	0.12
10-08-2021 04:00	10.54	11.07	0.12
10-08-2021 05:00	10.4	11.24	0.12
10-08-2021 06:00	10.52	11.32	0.21
10-08-2021 07:00	10.55	11.39	0.18
10-08-2021 08:00	10.5	11.42	0.19
10-08-2021 09:00	11.32	11.41	0.23
10-08-2021 10:00	11.33	11.66	0.16
10-08-2021 11:00	11.2	11.73	0.17
10-08-2021 12:00	11.27	11.88	0.18
10-08-2021 13:00	11.24	11.9	0.17
10-08-2021 14:00	12.14	12.08	0.14
10-08-2021 15:00	12.39	12.13	0.21
10-08-2021 16:00	12.22	12.23	0.2
10-08-2021 17:00	12.11	12.37	0.12
10-08-2021 18:00	12.13	12.48	0.21
10-08-2021 19:00	12.13	12.52	0.15
10-08-2021 20:00	12.21	12.78	0.19
10-08-2021 21:00	12.12	12.81	0.1

10-08-2021 22:00	12.37	12.89	0.14
10-08-2021 23:00	13.07	12.74	0.17
11-08-2021 00:00	13.17	12.78	0.19
11-08-2021 01:00	13.17	12.73	0.04
11-08-2021 02:00	13.28	12.84	0.2
11-08-2021 03:00	10.36	12.88	0.16
11-08-2021 04:00	10.33	12.68	0.16
11-08-2021 05:00	10.46	12.78	0.15
11-08-2021 06:00	10.58	12.69	0.11
11-08-2021 07:00	10.69	12.81	0.17
11-08-2021 08:00	10.78	12.92	0.23
11-08-2021 09:00	11.85	12.81	0.17
11-08-2021 10:00	11.79	12.87	0.16
11-08-2021 11:00	11.72	12.86	0.12
11-08-2021 12:00	11.7	12.76	0.16
11-08-2021 13:00	11.65	12.73	0.2
11-08-2021 14:00	11.62	12.99	0.12
11-08-2021 15:00	11.64	12.93	0.2
11-08-2021 16:00	11.6	12.97	0.21
11-08-2021 17:00	12.61	12.97	0.15
11-08-2021 18:00	12.7	12.8	0.2
11-08-2021 19:00	12.76	12.78	0.17
11-08-2021 20:00	12.75	12.87	0.11
11-08-2021 21:00	12.77	13.01	0.09
11-08-2021 22:00	12.38	13.27	0.21
11-08-2021 23:00	12.16	10.54	0.13
12-08-2021 00:00	12.28	10.4	0.17
12-08-2021 01:00	12.15	10.52	0.12
12-08-2021 02:00	12.21	10.55	0.16
12-08-2021 03:00	12.92	10.5	0.09
12-08-2021 04:00	12.96	11.32	0.14
12-08-2021 05:00	12.96	11.33	0.19
12-08-2021 06:00	12.99	11.2	0.16
12-08-2021 07:00	12.96	11.27	0.17
12-08-2021 08:00	12.98	11.24	0.16
12-08-2021 09:00	13.01	12.14	0.15
12-08-2021 10:00	13.13	12.39	0.18
12-08-2021 11:00	13.29	12.22	0.18
12-08-2021 12:00	13.34	12.11	0.15
12-08-2021 13:00	13.59	12.13	0.19
12-08-2021 14:00	13.85	12.13	0.19
12-08-2021 15:00	13.86	12.21	0.19
12-08-2021 16:00	12.76	12.12	0.15
12-08-2021 17:00	12.96	12.37	0.15
12-08-2021 18:00	12.94	13.07	0.15
12-08-2021 19:00	12.79	13.17	0.22
12-08-2021 20:00	12.88	13.17	0.17
12-08-2021 21:00	12.91	13.28	0.18

12-08-2021 22:00	12.82	10.36	0.19
12-08-2021 23:00	13.11	10.33	0.13
13-08-2021 00:00	13.33	10.46	0.26
13-08-2021 01:00	13.46	10.58	0.17
13-08-2021 02:00	13.56	10.69	0.11
13-08-2021 03:00	13.76	10.78	0.22
13-08-2021 04:00	13.8	11.96	0.14
13-08-2021 05:00	13.79	10.33	0.17
13-08-2021 06:00	13.77	10.19	0.19
13-08-2021 07:00	13.82	10.26	0.12
13-08-2021 08:00	13.78	10.37	0.15
13-08-2021 09:00	13.76	10.54	0.18
13-08-2021 10:00	13.72	10.85	0.15
13-08-2021 11:00	13.72	11.14	0.12
13-08-2021 12:00	13.76	11.27	0.14
13-08-2021 13:00	13.77	11.39	0.16
13-08-2021 14:00	13.75	11.54	0.18
13-08-2021 15:00	13.75	11.68	0.17
13-08-2021 16:00	13.75	11.92	0.08
13-08-2021 17:00	13.78	11.94	0.13
13-08-2021 18:00	13.82	11.94	0.25
13-08-2021 19:00	13.98	11.95	0.2
13-08-2021 20:00	11.87	12.15	0.2
13-08-2021 21:00	11.83	12.19	0.18
13-08-2021 22:00	11.84	12.22	0.05
13-08-2021 23:00	11.9	12.29	0.13
14-08-2021 00:00	11.85	12.32	0.16
14-08-2021 01:00	11.89	12.4	0.18
14-08-2021 02:00	11.85	12.46	0.12
14-08-2021 03:00	11.87	12.47	0.15
14-08-2021 04:00	11.84	12.47	0.01
14-08-2021 05:00	11.85	12.35	0.15
14-08-2021 06:00	11.82	12.27	0.11
14-08-2021 07:00	11.75	11.78	0.16
14-08-2021 08:00	11.72	11.86	0.19
14-08-2021 09:00	11.66	11.98	0.17
14-08-2021 10:00	11.68	11.87	0.2
14-08-2021 11:00	11.62	11.95	0.18
14-08-2021 12:00	11.69	11.95	0.18
14-08-2021 13:00	11.82	11.82	0.17
14-08-2021 14:00	11.86	11.79	0.16
14-08-2021 15:00	11.85	11.72	0.19
14-08-2021 16:00	11.89	11.85	0.19
14-08-2021 17:00	11.91	11.81	0.22
14-08-2021 18:00	11.92	11.87	0.22
14-08-2021 19:00	11.94	11.76	0.14
14-08-2021 20:00	11.85	11.76	0.17
14-08-2021 21:00	11.88	11.75	0.24

14-08-2021 22:00	11.91	11.81	0.12
14-08-2021 23:00	11.87	11.79	0.12
15-08-2021 00:00	11.9	12.81	0.17
15-08-2021 01:00	11.92	12.83	0.15
15-08-2021 02:00	11.87	12.61	0.1
15-08-2021 03:00	g	12.62	0.22
15-08-2021 04:00	11.89	12.72	0.16
15-08-2021 05:00	11.84	12.65	0.15
15-08-2021 06:00	11.79	12.72	0.22
15-08-2021 07:00	11.73	10.55	0.2
15-08-2021 08:00	11.7	10.87	0.15
15-08-2021 09:00	11.64	11.53	0.24
15-08-2021 10:00	11.6	12.43	0.1
15-08-2021 11:00	11.61	12.18	0.17
15-08-2021 12:00	11.6	11.39	0.1
15-08-2021 13:00	11.63	12.23	0.18
15-08-2021 14:00	11.66	12.25	0.11
15-08-2021 15:00	11.75	11.93	0.16
15-08-2021 16:00	11.81	11.99	0.2
15-08-2021 17:00	11.79	11.85	0.13
15-08-2021 18:00	11.81	12.03	0.18
15-08-2021 19:00	11.85	12.01	0.19
15-08-2021 20:00	11.83	11.96	0.15
15-08-2021 21:00	11.87	11.81	0.17
15-08-2021 22:00	11.86	11.87	0.13
15-08-2021 23:00	11.84	12.08	0.18
16-08-2021 00:00	11.89	11.96	0.18
16-08-2021 01:00	11.9	12.1	0.16
16-08-2021 02:00	11.86	12.11	0.11
16-08-2021 03:00	11.85	12.06	0.14
16-08-2021 04:00	11.87	12.01	0.16
16-08-2021 05:00	11.85	12.07	0.08
16-08-2021 06:00	11.79	11.94	0.11
16-08-2021 07:00	11.72	12.08	0.13
16-08-2021 08:00	11.7	12.03	0.12
16-08-2021 09:00	11.65	12.11	0.23
16-08-2021 10:00	11.62	12.12	0.14
16-08-2021 11:00	11.64	12.08	0.18
16-08-2021 12:00	11.6	12.56	0.17
16-08-2021 13:00	12.61	11.32	0.1
16-08-2021 14:00	12.7	11.74	0.15
16-08-2021 15:00	12.76	11.74	0.15
16-08-2021 16:00	12.75	11.75	0.13
16-08-2021 17:00	12.77	11.53	0.18
16-08-2021 18:00	12.38	11.41	0.15
16-08-2021 19:00	12.16	11.32	0.16
16-08-2021 20:00	12.28	12.17	0.15
16-08-2021 21:00	12.15	12.24	0.16

16-08-2021 22:00	12.21	12.23	0.2
16-08-2021 23:00	12.33	12.19	0.16
17-08-2021 00:00	12.16	12.16	0.17
17-08-2021 01:00	12.2	12.15	0.16
17-08-2021 02:00	10.27	12.1	0.14
17-08-2021 03:00	10.41	12.3	0.17
17-08-2021 04:00	11.66	12.31	0.17
17-08-2021 05:00	12.18	12.2	0.17
17-08-2021 06:00	12.19	12.1	0.18
17-08-2021 07:00	12.02	12.23	0.08
17-08-2021 08:00	10.32	12.12	0.23
17-08-2021 09:00	10.51	12.11	0.23
17-08-2021 10:00	10.85	12.31	0.21
17-08-2021 11:00	10.91	12.34	0.16
17-08-2021 12:00	10.94	12.29	0.21
17-08-2021 13:00	11.01	12.37	0.18
17-08-2021 14:00	11.37	12.17	0.15
17-08-2021 15:00	11.85	12.13	0.19
17-08-2021 16:00	11.98	12.38	0.14
17-08-2021 17:00	11.22	12.16	0.2
17-08-2021 18:00	12.7	12.28	0.17
17-08-2021 19:00	12.18	12.15	0.18
17-08-2021 20:00	12.3	12.21	0.24
17-08-2021 21:00	12.11	12.33	0.09
17-08-2021 22:00	12.06	12.16	0.21
17-08-2021 23:00	11.97	12.2	0.19
18-08-2021 00:00	11.89	10.27	0.22
18-08-2021 01:00	11.59	10.41	0.21
18-08-2021 02:00	11.2	10.44	0.18
18-08-2021 03:00	12.18	10.52	0.19
18-08-2021 04:00	11.95	10.63	0.22
18-08-2021 05:00	11.11	10.68	0.16
18-08-2021 06:00	11.23	10.72	0.13
18-08-2021 07:00	11.57	10.88	0.18
18-08-2021 08:00	10.21	10.94	0.1
18-08-2021 09:00	10.25	11.14	0.15
18-08-2021 10:00	10.99	11.16	0.15
18-08-2021 11:00	10.37	11.24	0.15
18-08-2021 12:00	10.83	11.26	0.16
18-08-2021 13:00	11.75	11.31	0.22
18-08-2021 14:00	11.56	11.85	0.22
18-08-2021 15:00	10.23	11.87	0.11
18-08-2021 16:00	11.19	11.85	0.21
18-08-2021 17:00	11.07	11.79	0.2
18-08-2021 18:00	11.72	11.72	0.11
18-08-2021 19:00	11.01	11.7	0.19
18-08-2021 20:00	11.92	11.65	1.19
18-08-2021 21:00	11.21	11.62	1.55

18-08-2021 22:00	10.42	11.64	0.19
18-08-2021 23:00	11.29	11.6	0.15
19-08-2021 00:00	10.86	12.61	0.14
19-08-2021 01:00	10.96	12.7	0.21
19-08-2021 02:00	10.53	12.76	0.12
19-08-2021 03:00	10.66	12.75	0.11
19-08-2021 04:00	10.27	12.77	0.12
19-08-2021 05:00	11.42	12.38	0.05
19-08-2021 06:00	11.9	12.16	0.21
19-08-2021 07:00	11.19	12.28	0.16
19-08-2021 08:00	11.85	12.15	0.17
19-08-2021 09:00	11.9	12.21	0.19
19-08-2021 10:00	11.86	11.74	0.15
19-08-2021 11:00	11.85	11.93	0.23
19-08-2021 12:00	11.87	11.66	0.07
19-08-2021 13:00	11.85	12.18	0.17
19-08-2021 14:00	11.79	12.19	0.11
19-08-2021 15:00	11.72	12.02	0.11
19-08-2021 16:00	11.7	10.32	0.17
19-08-2021 17:00	11.65	10.51	0.16
19-08-2021 18:00	11.62	10.85	0.25
19-08-2021 19:00	11.64	10.91	0.18
19-08-2021 20:00	11.6	10.94	0.22
19-08-2021 21:00	12.61	11.01	0.19
19-08-2021 22:00	12.7	11.37	0.19
19-08-2021 23:00	12.76	11.85	0.15
20-08-2021 00:00	12.75	11.98	0.16
20-08-2021 01:00	12.77	11.22	0.2
20-08-2021 02:00	12.38	12.7	0.13
20-08-2021 03:00	12.16	12.18	0.2
20-08-2021 04:00	12.28	12.3	0.17
20-08-2021 05:00	12.15	12.11	0.2
20-08-2021 06:00	12.21	12.06	0.13
20-08-2021 07:00	12.33	11.97	0.11
20-08-2021 08:00	12.16	11.89	0.16
20-08-2021 09:00	12.2	11.59	0.12
20-08-2021 10:00	10.27	11.2	0.17
20-08-2021 11:00	10.41	12.18	0.23
20-08-2021 12:00	11.66	11.95	0.12
20-08-2021 13:00	12.18	11.11	0.19
20-08-2021 14:00	12.19	11.23	0.18
20-08-2021 15:00	12.02	11.57	0.14
20-08-2021 16:00	10.32	10.21	0.16
20-08-2021 17:00	10.51	10.25	0.1
20-08-2021 18:00	10.85	10.99	0.19
20-08-2021 19:00	10.91	10.37	0.13
20-08-2021 20:00	10.94	10.83	0.21
20-08-2021 21:00	11.76	11.75	0.19

20-08-2021 22:00	11.77	11.56	0.02
20-08-2021 23:00	11.77	10.23	0.02
21-08-2021 00:00	11.71	11.19	0.04
21-08-2021 01:00	11.78	11.07	0.13
21-08-2021 02:00	11.74	11.72	0.16
21-08-2021 03:00	11.76	11.01	0.27
21-08-2021 04:00	11.68	11.92	0.06
21-08-2021 05:00	11.82	11.21	0.47
21-08-2021 06:00	12.29	10.42	0.16
21-08-2021 07:00	12.37	11.29	0.13
21-08-2021 08:00	12.37	10.86	0.12
21-08-2021 09:00	12.33	10.96	0.11
21-08-2021 10:00	12.38	10.53	0.11
21-08-2021 11:00	12.74	10.66	0.12
21-08-2021 12:00	12.9	10.27	1.1
21-08-2021 13:00	12.89	11.42	0.16
21-08-2021 14:00	12.92	11.9	0.1
21-08-2021 15:00	12.75	11.19	0.14
21-08-2021 16:00	12.72	11.85	0.2
21-08-2021 17:00	12.75	11.79	0.15
21-08-2021 18:00	12.71	11.73	0.16
21-08-2021 19:00	12.7	11.7	0.13
21-08-2021 20:00	12.73	11.64	0.11
21-08-2021 21:00	12.77	11.6	0.08
21-08-2021 22:00	12.75	11.61	0.18
21-08-2021 23:00	12.76	11.6	0.17
22-08-2021 00:00	12.78	11.63	0.14
22-08-2021 01:00	12.79	11.66	0.1
22-08-2021 02:00	12.82	11.75	0.2
22-08-2021 03:00	12.77	11.81	0.15
22-08-2021 04:00	12.73	11.79	0.24
22-08-2021 05:00	12.85	11.81	0.18
22-08-2021 06:00	12.71	11.85	0.06
22-08-2021 07:00	12.68	11.83	0.1
22-08-2021 08:00	12.74	11.87	0.24
22-08-2021 09:00	12.75	11.86	0.19
22-08-2021 10:00	12.76	11.84	0.19
22-08-2021 11:00	12.96	11.89	0.17
22-08-2021 12:00	12.94	11.9	0.16
22-08-2021 13:00	12.79	11.86	0.11
22-08-2021 14:00	12.88	11.85	1.07
22-08-2021 15:00	12.91	11.87	0.09
22-08-2021 16:00	12.82	11.85	0.15
22-08-2021 17:00	13.11	11.79	0.08
22-08-2021 18:00	13.33	11.72	0.16
22-08-2021 19:00	13.46	11.7	0.12
22-08-2021 20:00	13.56	11.65	0.19
22-08-2021 21:00	13.76	11.62	0.2

22-08-2021 22:00	13.8	11.64	0.1
22-08-2021 23:00	13.79	11.6	0.8
23-08-2021 00:00	13.77	12.61	0.12
23-08-2021 01:00	13.82	12.7	0.08
23-08-2021 02:00	13.78	12.76	0.13
23-08-2021 03:00	13.76	12.75	0.2
23-08-2021 04:00	13.72	12.77	0.04
23-08-2021 05:00	13.72	12.38	0.15
23-08-2021 06:00	13.76	12.16	0.1
23-08-2021 07:00	13.77	12.28	0.15
23-08-2021 08:00	13.75	12.15	0.07
23-08-2021 09:00	13.75	12.21	0.19
23-08-2021 10:00	13.75	12.33	0.18
23-08-2021 11:00	13.78	12.16	0.09
23-08-2021 12:00	13.82	12.2	0.1
23-08-2021 13:00	13.88	10.27	0.13
23-08-2021 14:00	13.9	10.41	0.1
23-08-2021 15:00	13.91	11.66	0.15
23-08-2021 16:00	13.97	12.18	0.17
23-08-2021 17:00	13.96	12.19	0.1
23-08-2021 18:00	13.94	12.02	0.08
23-08-2021 19:00	13.9	10.32	0.18
23-08-2021 20:00	13.85	10.51	0.16
23-08-2021 21:00	13.82	10.85	0.11
23-08-2021 22:00	13.81	10.91	0.08
23-08-2021 23:00	13.77	10.94	0.04
24-08-2021 00:00	13.76	11.9	0.16
24-08-2021 01:00	13.77	11.86	0.12
24-08-2021 02:00	13.79	11.85	0.2
24-08-2021 03:00	13.75	11.87	0.15
24-08-2021 04:00	13.72	11.85	0.21
24-08-2021 05:00	13.74	11.79	0.14
24-08-2021 06:00	13.73	11.72	0.14
24-08-2021 07:00	13.74	11.7	0.07
24-08-2021 08:00	13.76	11.65	0.13
24-08-2021 09:00	13.74	11.62	0.08
24-08-2021 10:00	13.78	11.64	0.07
24-08-2021 11:00	12.92	11.6	0.12
24-08-2021 12:00	12.91	12.61	0.1
24-08-2021 13:00	12.92	12.7	1.17
24-08-2021 14:00	12.96	12.76	0.13
24-08-2021 15:00	12.96	12.75	0.26
24-08-2021 16:00	12.99	12.77	0.22
24-08-2021 17:00	12.96	12.38	0.25
24-08-2021 18:00	12.98	12.16	0.12
24-08-2021 19:00	13.01	12.28	0.11
24-08-2021 20:00	13.13	12.15	0.09
24-08-2021 21:00	13.29	12.21	0.03

24-08-2021 22:00	13.34	12.33	0.16
24-08-2021 23:00	13.59	12.16	0.13
25-08-2021 00:00	13.85	12.2	0.16
25-08-2021 01:00	13.86	10.27	0.05
25-08-2021 02:00	13.85	10.41	0.14
25-08-2021 03:00	13.87	11.66	0.15
25-08-2021 04:00	13.86	12.18	0.26
25-08-2021 05:00	13.89	12.19	0.23
25-08-2021 06:00	10.01	12.02	0.19
25-08-2021 07:00	10.15	10.32	0.3
25-08-2021 08:00	10.26	10.51	0.39
25-08-2021 09:00	10.26	10.85	0.57
25-08-2021 10:00	10.24	10.91	0.46
25-08-2021 11:00	10.36	10.94	0.65
25-08-2021 12:00	10.36	11.87	0.57
25-08-2021 13:00	10.38	11.68	0.15
25-08-2021 14:00	10.45	11.79	0.23
25-08-2021 15:00	10.53	11.99	0.2
25-08-2021 16:00	10.72	12.12	0.24
25-08-2021 17:00	10.73	12.28	0.21
25-08-2021 18:00	10.73	12.31	0.22
25-08-2021 19:00	10.81	12.44	0.27
25-08-2021 20:00	10.86	12.57	0.31
25-08-2021 21:00	10.83	12.61	0.22
25-08-2021 22:00	10.84	12.79	0.25
25-08-2021 23:00	10.86	12.71	0.25
26-08-2021 00:00	10.92	12.88	0.18
26-08-2021 01:00	10.84	12.88	0.27
26-08-2021 02:00	10.86	12.76	0.16
26-08-2021 03:00	10.82	12.87	0.34
26-08-2021 04:00	10.8	12.91	0.37
26-08-2021 05:00	10.85	13.22	0.22
26-08-2021 06:00	10.85	13.36	0.27
26-08-2021 07:00	10.88	13.55	0.25
26-08-2021 08:00	10.83	10.15	0.22
26-08-2021 09:00	10.88	10.27	0.24
26-08-2021 10:00	10.94	10.31	0.27
26-08-2021 11:00	10.98	10.53	0.25
26-08-2021 12:00	10.93	10.54	0.13
26-08-2021 13:00	10.98	10.4	0.3
26-08-2021 14:00	10.97	10.52	0.22
26-08-2021 15:00	10.94	10.55	0.24
26-08-2021 16:00	10.99	10.5	0.2
26-08-2021 17:00	10.97	11.32	0.24
26-08-2021 18:00	10.96	11.33	0.15
26-08-2021 19:00	10.96	11.2	0.13
26-08-2021 20:00	10.93	11.27	0.19
26-08-2021 21:00	10.87	11.24	0.21

26-08-2021 22:00	10.98	12.14	0.22
26-08-2021 23:00	11.05	12.39	0.23
27-08-2021 00:00	11.02	12.22	0.2
27-08-2021 01:00	11.03	12.11	0.16
27-08-2021 02:00	11.25	12.13	0.24
27-08-2021 03:00	11.34	12.13	0.16
27-08-2021 04:00	11.73	12.21	0.12
27-08-2021 05:00	11.65	12.12	0.21
27-08-2021 06:00	11.67	12.37	0.2
27-08-2021 07:00	11.65	13.07	0.21
27-08-2021 08:00	11.61	13.17	0.12
27-08-2021 09:00	11.65	13.17	0.21
27-08-2021 10:00	11.68	13.28	0.2
27-08-2021 11:00	11.74	10.36	0.14
27-08-2021 12:00	11.76	10.33	0.15
27-08-2021 13:00	11.78	10.46	0.16
27-08-2021 14:00	11.76	10.58	0.22
27-08-2021 15:00	11.8	10.69	0.17
27-08-2021 16:00	11.81	10.78	0.18
27-08-2021 17:00	11.79	10.89	0.24
27-08-2021 18:00	11.79	10.84	0.14
27-08-2021 19:00	11.76	11.07	0.16
27-08-2021 20:00	11.78	11.13	0.13
27-08-2021 21:00	11.76	11.11	0.09
27-08-2021 22:00	11.77	11.12	0.15
27-08-2021 23:00	11.77	11.13	0.19
28-08-2021 00:00	11.71	11.11	0.1
28-08-2021 01:00	11.78	11.38	0.11
28-08-2021 02:00	11.74	11.43	0.14
28-08-2021 03:00	11.76	11.58	0.26
28-08-2021 04:00	11.68	12.11	0.13
28-08-2021 05:00	11.82	12.12	0.07
28-08-2021 06:00	12.29	12.11	0.12
28-08-2021 07:00	12.37	12.25	0.28
28-08-2021 08:00	12.37	12.37	0.11
28-08-2021 09:00	12.33	12.42	0.13
28-08-2021 10:00	12.38	12.54	0.17
28-08-2021 11:00	12.74	12.55	0.16
28-08-2021 12:00	12.9	12.76	0.1
28-08-2021 13:00	12.89	12.93	0.11
28-08-2021 14:00	12.92	13.04	0.23
28-08-2021 15:00	12.75	13.27	0.02
28-08-2021 16:00	12.72	13.36	0.15
28-08-2021 17:00	12.75	13.44	0.1
28-08-2021 18:00	12.71	13.48	0.12
28-08-2021 19:00	12.7	13.55	0.11
28-08-2021 20:00	12.73	13.44	0.18
28-08-2021 21:00	12.77	13.25	0.14

28-08-2021 22:00	12.75	13.46	0.14
28-08-2021 23:00	12.76	13.37	0.16
29-08-2021 00:00	12.78	13.39	0.02
29-08-2021 01:00	12.79	13.59	0.09
29-08-2021 02:00	12.82	13.53	0.09
29-08-2021 03:00	12.77	13.52	0.18
29-08-2021 04:00	12.73	13.5	0.05
29-08-2021 05:00	12.85	13.61	0.09
29-08-2021 06:00	12.71	10.4	0.05
29-08-2021 07:00	12.68	10.45	0.19
29-08-2021 08:00	12.74	10.37	0.11
29-08-2021 09:00	12.75	10.27	0.14
29-08-2021 10:00	12.76	10.32	0.23
29-08-2021 11:00	12.17	10.41	0.18
29-08-2021 12:00	12.24	10.57	0.21
29-08-2021 13:00	12.23	10.69	0.07
29-08-2021 14:00	12.19	11.07	0.24
29-08-2021 15:00	12.16	11.24	0
29-08-2021 16:00	12.15	11.32	0.11
29-08-2021 17:00	12.1	11.39	0.15
29-08-2021 18:00	12.3	11.42	0.23
29-08-2021 19:00	12.31	11.41	0.01
29-08-2021 20:00	12.2	11.66	0.07
29-08-2021 21:00	12.1	11.73	0.16
29-08-2021 22:00	12.23	11.88	0.05
29-08-2021 23:00	12.12	11.9	0.06
30-08-2021 00:00	12.11	12.08	0.15
30-08-2021 01:00	12.31	12.13	0.13
30-08-2021 02:00	12.34	12.23	0.17
30-08-2021 03:00	12.29	12.37	0.05
30-08-2021 04:00	12.37	12.48	0.06
30-08-2021 05:00	12.17	12.52	0.07
30-08-2021 06:00	12.13	12.78	0.11
30-08-2021 07:00	12.38	12.81	0.09
30-08-2021 08:00	12.16	12.89	0.05
30-08-2021 09:00	12.28	12.74	0.08
30-08-2021 10:00	12.15	12.78	0.1
30-08-2021 11:00	12.21	12.73	0.1
30-08-2021 12:00	12.33	12.84	0.2
30-08-2021 13:00	12.16	12.88	0.08
30-08-2021 14:00	12.2	12.68	0.12
30-08-2021 15:00	10.27	12.78	0.03
30-08-2021 16:00	10.41	12.69	0.11
30-08-2021 17:00	10.44	12.81	0.19
30-08-2021 18:00	10.52	12.92	0.02
30-08-2021 19:00	10.63	12.81	0.16
30-08-2021 20:00	10.68	12.87	0.15
30-08-2021 21:00	10.72	12.86	0.26

30-08-2021 22:00	10.88	12.76	0.23
30-08-2021 23:00	10.94	12.73	0.19
31-08-2021 00:00	11.14	12.99	0.3
31-08-2021 01:00	11.16	12.93	0.39
31-08-2021 02:00	11.24	12.97	0.57
31-08-2021 03:00	11.26	12.97	0.46
31-08-2021 04:00	11.31	12.8	0.65
31-08-2021 05:00	11.79	12.78	0.57
31-08-2021 06:00	11.73	12.87	0.15
31-08-2021 07:00	11.7	13.27	0.23
31-08-2021 08:00	11.64	13.38	0.2
31-08-2021 09:00	11.6	13.44	0.24
31-08-2021 10:00	11.61	13.48	0.21
31-08-2021 11:00	11.6	10.16	0.22
31-08-2021 12:00	11.63	10.24	0.27
31-08-2021 13:00	11.66	10.29	0.31
31-08-2021 14:00	11.75	10.36	0.22
31-08-2021 15:00	11.81	10.44	0.25
31-08-2021 16:00	11.79	10.51	0.25
31-08-2021 17:00	11.81	10.56	0.18
31-08-2021 18:00	11.85	10.77	0.27
31-08-2021 19:00	11.83	10.78	0.16
31-08-2021 20:00	11.87	11.1	0.34
31-08-2021 21:00	11.86	11.24	0.37
31-08-2021 22:00	11.84	11.56	0.22
31-08-2021 23:00	11.89	11.76	0.27

M/S SUTLON DRUGS RACHANAPALLI

Date&Time (YYYY-MM-DD hh:mm:ss)	SCRUBBER 1 (pH)	SCRUBBER 2 (pH)	VOC (PPM)
01-09-2021 01:00	10.39	10.94	0.08
01-09-2021 02:00	10.45	10.98	0.17
01-09-2021 03:00	10.47	10.93	0.03
01-09-2021 04:00	10.39	10	0.17
01-09-2021 05:00	10.42	10.08	0.17
01-09-2021 06:00	10.42	10.1	0.14
01-09-2021 07:00	10.48	10.08	0.17
01-09-2021 08:00	10.39	10.05	0.15
01-09-2021 09:00	10.42	10.07	0.1
01-09-2021 10:00	10.44	10.11	0.13
01-09-2021 11:00	10.44	10.1	0.08
01-09-2021 12:00	10.41	11.98	0.12
01-09-2021 13:00	10.41	10	0.1
01-09-2021 14:00	10.43	11.93	0.09
01-09-2021 15:00	10.41	11.95	0.1
01-09-2021 16:00	10.39	11.93	0.18
01-09-2021 17:00	10.38	10.09	0.11
01-09-2021 18:00	10.37	10.1	0.16
01-09-2021 19:00	10.36	10.21	0.12
01-09-2021 20:00	10.34	10.26	0.1
01-09-2021 21:00	10.36	10.25	0.12
01-09-2021 22:00	10.35	10.22	0.04
01-09-2021 23:00	10.35	10.19	0.07
02-09-2021 00:00	10.37	10.18	0.13
02-09-2021 01:00	10.35	10.15	0.11
02-09-2021 02:00	10.36	10.13	0.33
02-09-2021 03:00	10.4	10.12	0.02
02-09-2021 04:00	10.4	10.11	0.16
02-09-2021 05:00	10.37	10.11	0.06
02-09-2021 06:00	10.37	10.1	0.1
02-09-2021 07:00	10.45	10.08	0.14
02-09-2021 08:00	10.37	10.06	0.1
02-09-2021 09:00	10.37	10.07	0.15
02-09-2021 10:00	10.37	10.05	0.16
02-09-2021 11:00	10.37	10.03	0.09
02-09-2021 12:00	10.38	10.03	0.12
02-09-2021 13:00	10.42	12.4	0.05
02-09-2021 14:00	10.41	12.4	0.12
02-09-2021 15:00	10.34	12.4	0.16
02-09-2021 16:00	10.39	12.4	0
02-09-2021 17:00	10.33	12.45	0
02-09-2021 18:00	10.4	12.45	0.14
02-09-2021 19:00	10.37	12.45	0.15
02-09-2021 20:00	10.36	12.45	0.18
02-09-2021 21:00	10.39	12.45	0.13
02-09-2021 22:00	10.35	12.45	0.1

02-09-2021 23:00	10.35	12.45	0.16
03-09-2021 00:00	10.35	12.45	0.19
03-09-2021 01:00	10.36	12.45	0.12
03-09-2021 02:00	10.36	12.45	0.1
03-09-2021 03:00	10.42	12.45	0.05
03-09-2021 04:00	10.44	12.45	0.12
03-09-2021 05:00	10.44	12.45	0.13
03-09-2021 06:00	10.35	12.45	0.15
03-09-2021 07:00	10.42	12.45	0.15
03-09-2021 08:00	10.44	12.45	0.14
03-09-2021 09:00	10.35	12.45	0.18
03-09-2021 10:00	10.43	12.45	0.21
03-09-2021 11:00	10.44	12.45	0.16
03-09-2021 12:00	10.36	12.45	0.28
03-09-2021 13:00	10.36	12.45	0.16
03-09-2021 14:00	10.35	12.45	0.14
03-09-2021 15:00	10.35	12.45	0.13
03-09-2021 16:00	10.35	12.45	0.15
03-09-2021 17:00	10.39	12.45	0.15
03-09-2021 18:00	10.42	12.45	0.14
03-09-2021 19:00	10.33	12.45	0.1
03-09-2021 20:00	10.42	12.45	0.14
03-09-2021 21:00	10.33	12.45	0.1
03-09-2021 22:00	10.39	12.45	0.12
03-09-2021 23:00	10.41	12.45	0.18
04-09-2021 00:00	10.31	12.45	0.11
04-09-2021 01:00	10.41	12.45	0.2
04-09-2021 02:00	10.36	12.45	0.2
04-09-2021 03:00	10.33	12.45	0.23
04-09-2021 04:00	10.33	12.45	0.19
04-09-2021 05:00	10.37	12.45	0.19
04-09-2021 06:00	10.33	12.45	0.16
04-09-2021 07:00	10.35	12.45	0.12
04-09-2021 08:00	10.33	12.45	0.16
04-09-2021 09:00	10.4	12.45	0.25
04-09-2021 10:00	10.37	12.45	0.15
04-09-2021 11:00	10.3	12.45	0.16
04-09-2021 12:00	10.32	12.45	0.15
04-09-2021 13:00	10.28	12.45	0.16
04-09-2021 14:00	10.36	12.45	0.12
04-09-2021 15:00	10.27	12.45	0.13
04-09-2021 16:00	10.33	12.45	0.2
04-09-2021 17:00	10.26	12.45	0.15
04-09-2021 18:00	10.25	12.45	0.15
04-09-2021 19:00	10.26	12.45	0.11
04-09-2021 20:00	10.37	12.45	0.19
04-09-2021 21:00	10.38	12.45	0.14
04-09-2021 22:00	10.32	12.45	0.15

04-09-2021 23:00	10.32	12.45	0.07
05-09-2021 00:00	10.38	12.45	0.01
05-09-2021 01:00	10.37	12.45	0.21
05-09-2021 02:00	10.38	12.45	0.17
05-09-2021 03:00	10.34	12.45	0.12
05-09-2021 04:00	10.32	12.45	0.09
05-09-2021 05:00	10.31	12.45	0.25
05-09-2021 06:00	10.37	12.45	0.17
05-09-2021 07:00	10.33	12.45	0.18
05-09-2021 08:00	10.32	12.45	0.18
05-09-2021 09:00	10.31	12.45	0.14
05-09-2021 10:00	10.23	12.45	0.47
05-09-2021 11:00	10.37	10.45	0.18
05-09-2021 12:00	10.37	10.45	0.17
05-09-2021 13:00	10.33	10.25	0.06
05-09-2021 14:00	10.31	10.45	0.14
05-09-2021 15:00	10.26	10.45	0.12
05-09-2021 16:00	10.27	10.45	0.13
05-09-2021 17:00	10.26	12.45	0.19
05-09-2021 18:00	10.28	12.45	0.18
05-09-2021 19:00	10.3	12.4	0.11
05-09-2021 20:00	10.3	12.4	0.22
05-09-2021 21:00	10.32	10.4	0.17
05-09-2021 22:00	10.33	10.45	0.17
05-09-2021 23:00	10.37	12.45	0.14
06-09-2021 00:00	10.31	12.4	1.17
06-09-2021 01:00	10.32	12.45	0.15
06-09-2021 02:00	10.32	12.45	0.11
06-09-2021 03:00	10.33	12.4	0.07
06-09-2021 04:00	10.33	11.45	0.14
06-09-2021 05:00	10.32	11.45	0.19
06-09-2021 06:00	10.37	12.45	0.18
06-09-2021 07:00	10.37	12.45	0.12
06-09-2021 08:00	10.37	11.45	0.21
06-09-2021 09:00	10.31	11.4	0.2
06-09-2021 10:00	10.27	10.4	0.12
06-09-2021 11:00	10.27	10.45	0.08
06-09-2021 12:00	10.26	10.65	0.08
06-09-2021 13:00	10.25	12.92	0.03
06-09-2021 14:00	10.25	12.75	0
06-09-2021 15:00	10.32	12.65	0.17
06-09-2021 16:00	10.3	12.7	0.05
06-09-2021 17:00	10.29	12.87	0.2
06-09-2021 18:00	10.24	12.7	0.11
06-09-2021 19:00	10.24	12.98	0.19
06-09-2021 20:00	10.28	12.82	0.13
06-09-2021 21:00	10.27	12.78	0.14
06-09-2021 22:00	10.27	12.88	0.04

06-09-2021 23:00	10.26	12.76	0.17
07-09-2021 00:00	10.26	12.75	0.08
07-09-2021 01:00	10.34	12.85	0.14
07-09-2021 02:00	10.3	12.76	0.2
07-09-2021 03:00	10.32	12.78	0.15
07-09-2021 04:00	10.37	12.97	0.12
07-09-2021 05:00	10.29	12.72	0.1
07-09-2021 06:00	10.31	12.75	0.12
07-09-2021 07:00	10.3	12.79	0.13
07-09-2021 08:00	10.35	12.76	0.17
07-09-2021 09:00	10.3	12.75	0.16
07-09-2021 10:00	10.26	12.93	0.17
07-09-2021 11:00	13.03	13.07	0.09
07-09-2021 12:00	12.26	13.03	0.16
07-09-2021 13:00	10.22	13.24	0.08
07-09-2021 14:00	10.2	13.03	0.13
07-09-2021 15:00	10.21	13.14	0.11
07-09-2021 16:00	10.17	13.19	0.24
07-09-2021 17:00	10.14	13.05	0.04
07-09-2021 18:00	10.26	13.19	0.22
07-09-2021 19:00	10.31	13.02	0.1
07-09-2021 20:00	10.35	13.09	0.02
07-09-2021 21:00	10.32	12.99	0.04
07-09-2021 22:00	10.37	13.2	0.1
07-09-2021 23:00	10.3	13.21	0.19
08-09-2021 00:00	10.36	13.2	0.18
08-09-2021 01:00	10.34	13.21	0.01
08-09-2021 02:00	10.36	13.09	0.12
08-09-2021 03:00	10.4	13.13	0.19
08-09-2021 04:00	10.38	13.11	0.18
08-09-2021 05:00	10.37	13.09	0.12
08-09-2021 06:00	10.35	12.98	0.17
08-09-2021 07:00	10.41	13.09	0.08
08-09-2021 08:00	10.37	13.2	0.1
08-09-2021 09:00	10.34	12.98	0.01
08-09-2021 10:00	10.34	13.19	0.11
08-09-2021 11:00	10.33	12.97	0.03
08-09-2021 12:00	10.32	13.06	0.23
08-09-2021 13:00	10.3	12.95	0.21
08-09-2021 14:00	10.21	12.93	0.14
08-09-2021 15:00	12.76	11.8	0.15
08-09-2021 16:00	11.1	11.18	1.96
08-09-2021 17:00	11.15	11.38	1.25
08-09-2021 18:00	11.17	11.44	1.58
08-09-2021 19:00	11.12	11.44	1.88
08-09-2021 20:00	11.15	11.4	1.69
08-09-2021 21:00	11.21	11.49	1.98
08-09-2021 22:00	11.23	11.47	1.73

08-09-2021 23:00	11.17	11.38	1.79
09-09-2021 00:00	11.2	11.48	1.78
09-09-2021 01:00	11.17	11.19	1.52
09-09-2021 02:00	11.22	11.18	1.2
09-09-2021 03:00	11.22	11.25	0.17
09-09-2021 04:00	13.23	11.44	1.44
09-09-2021 05:00	13.22	11.25	0.01
09-09-2021 06:00	13.26	11.24	0.34
09-09-2021 07:00	13.25	11.21	1.91
09-09-2021 08:00	13.23	11.45	1.8
09-09-2021 09:00	13.23	11.21	0.4
09-09-2021 10:00	13.19	11.32	0.89
09-09-2021 11:00	13.22	11.25	1.42
09-09-2021 12:00	13.17	11.43	1.58
09-09-2021 13:00	13.16	11.4	1.35
09-09-2021 14:00	13.19	11.19	0.62
09-09-2021 15:00	13.16	11.19	2.05
09-09-2021 16:00	13.17	11.38	2.19
09-09-2021 17:00	13.18	11.34	2.98
09-09-2021 18:00	13.13	11.23	2.86
09-09-2021 19:00	13.13	11.14	1.72
09-09-2021 20:00	13.15	11.17	1.06
09-09-2021 21:00	13.14	11.22	0.55
09-09-2021 22:00	13.13	11.37	0.58
09-09-2021 23:00	13.13	11.4	0.64
10-09-2021 00:00	13.15	11.38	0.35
10-09-2021 01:00	13.15	11.31	0.4
10-09-2021 02:00	13.13	11.41	0.3
10-09-2021 03:00	13.13	11.18	0.16
10-09-2021 04:00	13.14	11.2	0.25
10-09-2021 05:00	13.14	11.42	0.26
10-09-2021 06:00	13.18	11.25	0.16
10-09-2021 07:00	13.17	11.41	0.08
10-09-2021 08:00	13.16	11.22	0.1
10-09-2021 09:00	13.17	11.3	0.07
10-09-2021 10:00	13.23	11.23	0.09
10-09-2021 11:00	13.23	11.23	0.13
10-09-2021 12:00	13.19	11.44	0
10-09-2021 13:00	13.13	11.32	0.13
10-09-2021 14:00	12.53	10.65	0.21
10-09-2021 15:00	12.48	10	0.61
10-09-2021 16:00	12.47	10.14	1.04
10-09-2021 17:00	12.49	10.98	1.55
10-09-2021 18:00	12.49	10.7	1.99
10-09-2021 19:00	12.47	10.77	0.53
10-09-2021 20:00	12.49	10.72	0.67
10-09-2021 21:00	12.61	10.85	0.68
10-09-2021 22:00	12.49	10.89	0.92

10-09-2021 23:00	12.42	10.04	0.57
11-09-2021 00:00	12.19	10.04	0.8
11-09-2021 01:00	11.54	11.94	1.13
11-09-2021 02:00	11.52	11.92	1.13
11-09-2021 03:00	11.43	11.83	0.32
11-09-2021 04:00	11.39	11.69	1.46
11-09-2021 05:00	11.29	11.68	1.37
11-09-2021 06:00	11.26	11.94	1.36
11-09-2021 07:00	11.22	11.72	1.39
11-09-2021 08:00	11.19	11.75	1.11
11-09-2021 09:00	11.18	10.05	0.99
11-09-2021 10:00	11.15	10.03	1.04
11-09-2021 11:00	11.13	10.02	0.9
11-09-2021 12:00	12.11	10.23	0.88
11-09-2021 13:00	12.67	11.93	0.61
11-09-2021 14:00	12.68	11.95	1.06
11-09-2021 15:00	12.73	11.77	1.04
11-09-2021 16:00	12.66	11.86	1.13
11-09-2021 17:00	12.59	10.03	1.65
11-09-2021 18:00	12.63	10.39	1.5
11-09-2021 19:00	12.48	10.37	1.92
11-09-2021 20:00	12.71	10.11	1.33
11-09-2021 21:00	12.72	10.57	0.65
11-09-2021 22:00	12.77	10.66	0.51
11-09-2021 23:00	12.66	10.48	0.34
12-09-2021 00:00	12.62	10.65	0.3
12-09-2021 01:00	12.52	10.75	0.19
12-09-2021 02:00	12.6	10.85	0.18
12-09-2021 03:00	12.66	10.64	0.26
12-09-2021 04:00	12.58	10.52	0.25
12-09-2021 05:00	12.48	10.51	0.19
12-09-2021 06:00	12.44	10.67	0.25
12-09-2021 07:00	12.41	10.81	0.22
12-09-2021 08:00	12.47	10.72	0.29
12-09-2021 09:00	12.45	10.67	0.21
12-09-2021 10:00	12.47	12.96	0.35
12-09-2021 11:00	12.41	12.61	0.32
12-09-2021 12:00	12.37	12.35	0.17
12-09-2021 13:00	11.11	11.38	1.91
12-09-2021 14:00	11.1	11.18	1.96
12-09-2021 15:00	11.15	11.38	1.25
12-09-2021 16:00	11.17	11.44	1.58
12-09-2021 17:00	11.12	11.44	1.88
12-09-2021 18:00	11.15	11.4	1.69
12-09-2021 19:00	11.21	11.49	1.98
12-09-2021 20:00	11.23	11.47	1.73
12-09-2021 21:00	11.17	11.38	1.79
12-09-2021 22:00	11.2	11.48	1.78

12-09-2021 23:00	11.17	11.19	1.52
13-09-2021 00:00	11.22	11.18	1.2
13-09-2021 01:00	11.22	11.25	0.17
13-09-2021 02:00	11.24	11.23	0.66
13-09-2021 03:00	11.23	11.25	0.86
13-09-2021 04:00	11.25	11.45	0.61
13-09-2021 05:00	11.26	11.3	0.23
13-09-2021 06:00	11.22	11.27	0.56
13-09-2021 07:00	11.22	11.41	0.33
13-09-2021 08:00	11.17	11.31	0.72
13-09-2021 09:00	11.1	11.24	0.81
13-09-2021 10:00	11.11	11.25	1.76
13-09-2021 11:00	11.09	11.3	2.79
13-09-2021 12:00	11.09	11.3	2.59
13-09-2021 13:00	11.09	11.38	2.51
13-09-2021 14:00	11.13	11.23	2.97
13-09-2021 15:00	11.13	11.25	0
13-09-2021 16:00	11.15	11.33	1.05
13-09-2021 17:00	11.18	11.41	0.5
13-09-2021 18:00	11.18	11.31	0.66
13-09-2021 19:00	11.17	11.23	0.23
13-09-2021 20:00	11.16	11.39	0.86
13-09-2021 21:00	11.19	11.5	0.1
13-09-2021 22:00	11.23	11.25	0.01
13-09-2021 23:00	11.21	11.49	0.52
14-09-2021 00:00	11.19	11.24	0.89
14-09-2021 01:00	11.23	11.32	0.42
14-09-2021 02:00	11.18	11.39	0.02
14-09-2021 03:00	11.17	11.38	0.42
14-09-2021 04:00	11.14	11.23	0.55
14-09-2021 05:00	11.13	11.4	1.47
14-09-2021 06:00	11.15	11.24	1.83
14-09-2021 07:00	11.13	11.29	2.32
14-09-2021 08:00	11.1	11.16	2.55
14-09-2021 09:00	12.75	11.46	0.32
14-09-2021 10:00	12.79	11.4	0.24
14-09-2021 11:00	12.77	11.31	0.35
14-09-2021 12:00	12.79	11.23	0.25
14-09-2021 13:00	12.81	11.24	0.26
14-09-2021 14:00	12.79	11.31	0.38
14-09-2021 15:00	12.74	11.45	0.48
14-09-2021 16:00	12.72	11.32	0.48
14-09-2021 17:00	12.72	11.32	0.48
14-09-2021 18:00	12.72	11.32	0.69
14-09-2021 19:00	12.7	11.31	0.97
14-09-2021 20:00	12.7	11.19	1.19
14-09-2021 21:00	12.71	11.24	1.35
14-09-2021 22:00	12.72	11.35	1.08

14-09-2021 23:00	12.71	11.16	1.01
15-09-2021 00:00	12.71	11.27	0.92
15-09-2021 01:00	12.73	11.42	1
15-09-2021 02:00	12.75	11.22	0.99
15-09-2021 03:00	12.74	11.24	1.09
15-09-2021 04:00	12.77	11.21	1.05
15-09-2021 05:00	12.74	11.22	0.82
15-09-2021 06:00	12.75	11.42	1.06
15-09-2021 07:00	12.79	11.27	0.91
15-09-2021 08:00	12.77	11.28	0.86
15-09-2021 09:00	12.77	11.38	1.05
15-09-2021 10:00	12.74	11.26	0.94
15-09-2021 11:00	12.76	11.38	0.88
15-09-2021 12:00	12.75	11.47	0.91
15-09-2021 13:00	12.79	11.24	1.05
15-09-2021 14:00	12.79	11.47	0.96
15-09-2021 15:00	12.78	11.47	0.92
15-09-2021 16:00	12.72	11.2	0.99
15-09-2021 17:00	12.96	11.31	1.57
15-09-2021 18:00	13.04	11.14	1.86
15-09-2021 19:00	13.08	11.12	1.73
15-09-2021 20:00	13.06	11.1	2.04
15-09-2021 21:00	13.11	11.21	2.14
15-09-2021 22:00	13.13	11.09	2.03
15-09-2021 23:00	13.11	11.27	1.92
16-09-2021 00:00	13.14	11.14	1.57
16-09-2021 01:00	13.16	11.34	1.75
16-09-2021 02:00	13.18	11.21	1.77
16-09-2021 03:00	13.16	11.24	1.58
16-09-2021 04:00	13.17	11.27	1.7
16-09-2021 05:00	13.21	11.4	1.52
16-09-2021 06:00	13.22	11.48	1.64
16-09-2021 07:00	13.22	11.39	1.66
16-09-2021 08:00	13.24	11.28	1.6
16-09-2021 09:00	13.25	11.4	1.64
16-09-2021 10:00	13.25	11.23	1.63
16-09-2021 11:00	13.28	11.48	1.8
16-09-2021 12:00	13.24	11.35	1.57
16-09-2021 13:00	13.28	11.36	1.83
16-09-2021 14:00	13.27	11.45	1.66
16-09-2021 15:00	13.21	11.39	1.59
16-09-2021 16:00	13.22	11.41	1.47
16-09-2021 17:00	13.18	11.17	1.67
16-09-2021 18:00	13.22	11.32	2.02
16-09-2021 19:00	13.21	11.12	2.21
16-09-2021 20:00	13.17	11.24	2.16
16-09-2021 21:00	13.15	11.32	2.32
16-09-2021 22:00	13.16	11.06	0.63

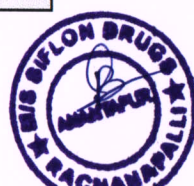
16-09-2021 23:00	13.09	11.07	0.98
17-09-2021 00:00	13.11	11.11	2.32
17-09-2021 01:00	13.15	11.4	2.79
17-09-2021 02:00	13.14	11.2	0.69
17-09-2021 03:00	12.78	11.84	0.05
17-09-2021 04:00	12.82	11.87	0.12
17-09-2021 05:00	12.92	11.91	0.08
17-09-2021 06:00	12.86	11.91	0.04
17-09-2021 07:00	12.92	11.92	0.06
17-09-2021 08:00	12.9	11.69	0.14
17-09-2021 09:00	12.86	11.69	0.18
17-09-2021 10:00	13.14	11.22	0.55
17-09-2021 11:00	13.13	11.37	0.58
17-09-2021 12:00	13.13	11.4	0.64
17-09-2021 13:00	13.15	11.38	0.35
17-09-2021 14:00	13.15	11.31	0.4
17-09-2021 15:00	13.13	11.41	0.3
17-09-2021 16:00	13.13	11.18	0.16
17-09-2021 17:00	13.14	11.2	0.25
17-09-2021 18:00	13.14	11.42	0.26
17-09-2021 19:00	10.04	12.3	0.15
17-09-2021 20:00	10.04	12.43	0.1
17-09-2021 21:00	10.03	12.22	0.13
17-09-2021 22:00	10.03	12.23	0.31
17-09-2021 23:00	10.04	12.22	0.04
18-09-2021 00:00	10.06	12.27	0.18
18-09-2021 01:00	10.04	12.29	0.12
18-09-2021 02:00	10.04	12.33	0.15
18-09-2021 03:00	10.05	12.3	0.15
18-09-2021 04:00	10.08	12.23	0.12
18-09-2021 05:00	10.08	12.45	0.11
18-09-2021 06:00	10.09	12.48	0.11
18-09-2021 07:00	10.11	12.4	0.19
18-09-2021 08:00	10.1	12.2	0.22
18-09-2021 09:00	11.95	12.27	0
18-09-2021 10:00	11.94	12.22	0.1
18-09-2021 11:00	11.94	12.26	0.12
18-09-2021 12:00	11.93	12.37	0.16
18-09-2021 13:00	11.95	12.25	0.03
18-09-2021 14:00	11.96	11.22	0.13
18-09-2021 15:00	11.91	12.18	0.16
18-09-2021 16:00	11.91	12.33	0.08
18-09-2021 17:00	10.23	12.21	0.34
18-09-2021 18:00	11.89	12.29	0.11
18-09-2021 19:00	11.91	12.34	0.13
18-09-2021 20:00	11.89	12.24	0.14
18-09-2021 21:00	11.9	12.23	0.05
18-09-2021 22:00	11.91	12.37	0.07

18-09-2021 23:00	11.93	12.18	0.1
19-09-2021 00:00	11.92	12.38	0.12
19-09-2021 01:00	11.91	12.36	0.11
19-09-2021 02:00	11.93	12.37	0.1
19-09-2021 03:00	11.96	12.16	0.14
19-09-2021 04:00	11.91	12.15	0.02
19-09-2021 05:00	11.89	12.16	0.1
19-09-2021 06:00	11.93	12.15	0.04
19-09-2021 07:00	11.94	12.32	0.17
19-09-2021 08:00	11.92	12.26	0.08
19-09-2021 09:00	11.91	12.17	0.22
19-09-2021 10:00	11.89	12.32	0.15
19-09-2021 11:00	11.84	12.19	0.15
19-09-2021 12:00	11.86	12.27	0.08
19-09-2021 13:00	11.83	12.22	0.11
19-09-2021 14:00	11.81	12.34	0.05
19-09-2021 15:00	11.81	12.17	0.14
19-09-2021 16:00	11.82	12.3	0.12
19-09-2021 17:00	11.81	12.05	0.15
19-09-2021 18:00	11.82	12.13	0.14
19-09-2021 19:00	11.81	12.12	0.17
19-09-2021 20:00	11.81	12.22	0.13
19-09-2021 21:00	11.82	12.21	0.02
19-09-2021 22:00	11.83	12.23	0.11
19-09-2021 23:00	11.83	12.14	0.09
20-09-2021 00:00	11.86	12.03	0.08
20-09-2021 01:00	11.86	12.22	0.14
20-09-2021 02:00	11.84	12.05	0.13
20-09-2021 03:00	11.84	12.24	0.19
20-09-2021 04:00	11.88	12.3	0.12
20-09-2021 05:00	11.88	12.13	0.15
20-09-2021 06:00	11.9	12.33	0.11
20-09-2021 07:00	11.89	12.32	0.21
20-09-2021 08:00	11.88	12.12	0.12
20-09-2021 09:00	12.2	12.11	0
20-09-2021 10:00	12.2	12.17	0.11
20-09-2021 11:00	12.16	12.32	0.18
20-09-2021 12:00	12.14	12.11	0.16
20-09-2021 13:00	12.14	12.21	0.07
20-09-2021 14:00	12.13	12.2	0.16
20-09-2021 15:00	12.09	12.25	0.13
20-09-2021 16:00	12.08	12.19	0.11
20-09-2021 17:00	12.07	12.15	0.16
20-09-2021 18:00	12.09	12.16	0.14
20-09-2021 19:00	12.09	12.12	0.06
20-09-2021 20:00	12.13	12.28	0.13
20-09-2021 21:00	12.13	12.25	0.16
20-09-2021 22:00	12.14	12.15	0.11

20-09-2021 23:00	12.18	12.25	0.06
21-09-2021 00:00	12.19	12.26	0.1
21-09-2021 01:00	12.2	12.3	0.15
21-09-2021 02:00	12.27	12.31	0.11
21-09-2021 03:00	12.31	12.17	0.03
21-09-2021 04:00	12.31	12.34	0.16
21-09-2021 05:00	12.32	12.23	0.07
21-09-2021 06:00	12.29	12.25	0.09
21-09-2021 07:00	12.3	12.35	0.14
21-09-2021 08:00	12.31	12.14	0.17
21-09-2021 09:00	12.29	12.31	0.04
21-09-2021 10:00	12.16	12.32	0.15
21-09-2021 11:00	12.14	12.24	0.03
21-09-2021 12:00	12.13	12.15	0.19
21-09-2021 13:00	12.13	12.14	0.18
21-09-2021 14:00	12.11	12.3	0.18
21-09-2021 15:00	11.98	12.12	0.1
21-09-2021 16:00	11.95	12.1	0.01
21-09-2021 17:00	11.91	12.3	0.09
21-09-2021 18:00	11.93	12.11	0.15
21-09-2021 19:00	11.92	12.1	0.1
21-09-2021 20:00	11.9	12.12	0.16
21-09-2021 21:00	11.95	12.35	0.11
21-09-2021 22:00	11.93	12.34	0.16
21-09-2021 23:00	11.94	12.2	0.1
22-09-2021 00:00	11.92	12.18	0.11
22-09-2021 01:00	11.9	12.14	0.14
22-09-2021 02:00	11.91	12.25	0.11
22-09-2021 03:00	11.96	12.19	0.17
22-09-2021 04:00	11.92	12.3	0.14
22-09-2021 05:00	11.94	12.34	0.11
22-09-2021 06:00	11.95	12.24	0.02
22-09-2021 07:00	11.96	12.21	0.1
22-09-2021 08:00	11.92	12.33	0.13
22-09-2021 09:00	11.89	12.13	0.1
22-09-2021 10:00	11.88	12.25	0.15
22-09-2021 11:00	11.93	12.35	0.05
22-09-2021 12:00	11.98	12.35	0.13
22-09-2021 13:00	11.98	12.17	0.09
22-09-2021 14:00	12	12.12	0.14
22-09-2021 15:00	12.04	12.12	0.09
22-09-2021 16:00	12.09	11.5	0.14
22-09-2021 17:00	12.09	11.86	0.14
22-09-2021 18:00	12.08	11.6	0.07
22-09-2021 19:00	12.1	11.76	0.11
22-09-2021 20:00	12.1	11.75	0.08
22-09-2021 21:00	12.09	12.15	0.08
22-09-2021 22:00	12.15	12.17	0.11

22-09-2021 23:00	12.11	12.14	0.11
23-09-2021 00:00	12.13	12.28	0.16
23-09-2021 01:00	12.17	12.25	0.13
23-09-2021 02:00	12.15	11.89	0.1
23-09-2021 03:00	12.19	10.6	0.12
23-09-2021 04:00	12.17	11.85	0.14
23-09-2021 05:00	12.2	12.08	0.07
23-09-2021 06:00	12.18	12.13	0.12
23-09-2021 07:00	12.15	11.86	0.13
23-09-2021 08:00	12.18	11.92	0.08
23-09-2021 09:00	12.11	11.71	0.03
23-09-2021 10:00	12.12	12.05	0.11
23-09-2021 11:00	12.11	12.14	0.08
23-09-2021 12:00	12.04	12.2	0.1
23-09-2021 13:00	12.02	12.22	0.18
23-09-2021 14:00	12.02	12.15	0.2
23-09-2021 15:00	12.13	11.87	0.02
23-09-2021 16:00	12.08	11.56	0.07
23-09-2021 17:00	12.16	11.09	0.16
23-09-2021 18:00	12.24	11.54	0.16
23-09-2021 19:00	12.22	11.65	0.14
23-09-2021 20:00	12.21	11.46	0.16
23-09-2021 21:00	12.16	11.8	0.12
23-09-2021 22:00	12.21	11.62	0.17
23-09-2021 23:00	12.2	11.35	0.07
24-09-2021 00:00	12.21	12.56	0.14
24-09-2021 01:00	12.22	12.27	0.06
24-09-2021 02:00	12.16	12.1	0.21
24-09-2021 03:00	12.22	11.74	0.05
24-09-2021 04:00	12.17	11.78	0.1
24-09-2021 05:00	12.16	12	0.13
24-09-2021 06:00	12.2	11.78	0.19
24-09-2021 07:00	-3.23	11.21	0.48
24-09-2021 08:00	12.19	11.42	0.17
24-09-2021 09:00	12.14	11.98	0.02
24-09-2021 10:00	12.11	12.76	0.18
24-09-2021 11:00	12.07	12.42	0.15
24-09-2021 12:00	12.04	12.53	0.1
24-09-2021 13:00	12.01	12.25	0.17
24-09-2021 14:00	11.97	12.33	0.08
24-09-2021 15:00	12.03	12.11	0.18
24-09-2021 16:00	12.06	12.27	0.14
24-09-2021 17:00	12.07	12.2	0.18
24-09-2021 18:00	12.06	12.16	0.25
24-09-2021 19:00	12.09	12.11	0.12
24-09-2021 20:00	12.1	12.06	0.15
24-09-2021 21:00	12.12	11.82	0.13
24-09-2021 22:00	12.09	11.8	0.07

24-09-2021 23:00	12.1	11.79	0.14
25-09-2021 00:00	12.1	12.02	0.14
25-09-2021 01:00	12.14	11.78	0.11
25-09-2021 02:00	12.15	11.92	0.13
25-09-2021 03:00	12.12	11.95	0.13
25-09-2021 04:00	12.15	11.85	0.14
25-09-2021 05:00	12.13	11.91	0.14
25-09-2021 06:00	12.17	11.8	0.06
25-09-2021 07:00	12.13	11.94	0.06
25-09-2021 08:00	12.16	11.8	0.12
25-09-2021 09:00	12.08	11.78	0.08
25-09-2021 10:00	12.12	11.99	0.03
25-09-2021 11:00	12.08	11.97	0.17
25-09-2021 12:00	12.01	11.74	0.17
25-09-2021 13:00	11.95	11.71	0.09
25-09-2021 14:00	11.97	11.81	0.11
25-09-2021 15:00	12.04	11.7	0.01
25-09-2021 16:00	12.04	11.95	0.03
25-09-2021 17:00	12.01	11.98	0.14
25-09-2021 18:00	12.05	11.92	0.08
25-09-2021 19:00	12.08	11.83	0.11
25-09-2021 20:00	12.06	11.8	0.15
25-09-2021 21:00	12.06	12.06	0.07
25-09-2021 22:00	12.1	11.93	0.25
25-09-2021 23:00	12.09	11.88	0.1
26-09-2021 00:00	12.14	12.02	0.17
26-09-2021 01:00	12.12	11.98	0.13
26-09-2021 02:00	12.15	11.97	0.1
26-09-2021 03:00	12.13	12.13	0.1
26-09-2021 04:00	12.12	12.05	0.15
26-09-2021 05:00	12.18	12.18	0.1
26-09-2021 06:00	12.15	12.03	0.13
26-09-2021 07:00	12.13	12.21	0.11
26-09-2021 08:00	12.16	12	0.13
26-09-2021 09:00	12.14	12.01	0.04
26-09-2021 10:00	12.07	12.02	0.11
26-09-2021 11:00	12.07	12.01	0.19
26-09-2021 12:00	12.04	12.03	0.02
26-09-2021 13:00	11.97	11.97	0.13
26-09-2021 14:00	11.99	12.14	0.2
26-09-2021 15:00	12	11.9	0.13
26-09-2021 16:00	11.96	12.12	0.18
26-09-2021 17:00	12.01	12.09	0.11
26-09-2021 18:00	12.02	12.08	0.14
26-09-2021 19:00	12.05	12.04	0.16
26-09-2021 20:00	12.1	11.95	0.18
26-09-2021 21:00	12.13	11.86	0.14
26-09-2021 22:00	12.1	12.09	0.11



26-09-2021 23:00	12.14	12.05	0.06
27-09-2021 00:00	12.16	12.1	0.13
27-09-2021 01:00	12.1	11.85	0.05
27-09-2021 02:00	12.14	11.99	0.11
27-09-2021 03:00	12.12	11.97	0.15
27-09-2021 04:00	12.18	11.85	0.13
27-09-2021 05:00	12.12	12.03	0.17
27-09-2021 06:00	12.18	12.02	0.13
27-09-2021 07:00	12.13	11.99	0.12
27-09-2021 08:00	12.16	11.97	0.16
27-09-2021 09:00	12.12	11.95	0.17
27-09-2021 10:00	12.09	11.92	0.13
27-09-2021 11:00	12.06	11.95	0.17
27-09-2021 12:00	12.04	11.94	0.16
27-09-2021 13:00	12.02	11.81	0.19
27-09-2021 14:00	12	11.85	0.11
27-09-2021 15:00	11.96	11.73	0.15
27-09-2021 16:00	12	11.67	0.21
27-09-2021 17:00	12.02	11.72	0.1
27-09-2021 18:00	12.06	11.59	0.16
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27-09-2021 20:00	12.04	11.61	0.14
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27-09-2021 22:00	12.1	11.27	0.18
27-09-2021 23:00	12.11	11.16	0.14
28-09-2021 00:00	12.11	11.21	0.08
28-09-2021 01:00	12.12	11.29	0.13
28-09-2021 02:00	12.13	11.31	0.12
28-09-2021 03:00	12.16	11.3	0.04
28-09-2021 04:00	12.18	11.33	0.15
28-09-2021 05:00	12.13	10.81	0.14
28-09-2021 06:00	12.16	10.67	0.09
28-09-2021 07:00	12.16	10.57	0.14
28-09-2021 08:00	12.15	10.44	0.19
28-09-2021 09:00	12.09	10.31	0.12
28-09-2021 10:00	11.86	10.31	0.03
28-09-2021 11:00	11.81	10.4	0.11
28-09-2021 12:00	11.79	10.39	0.3
28-09-2021 13:00	11.78	10.19	0.09
28-09-2021 14:00	11.76	10.26	0.12
28-09-2021 15:00	11.76	10.14	0.14
28-09-2021 16:00	11.78	10.29	0.16
28-09-2021 17:00	11.82	10.19	0.1
28-09-2021 18:00	11.85	10.24	0.1
28-09-2021 19:00	11.83	10.17	0.14
28-09-2021 20:00	11.84	10.23	0.12
28-09-2021 21:00	11.89	10.01	0.16
28-09-2021 22:00	11.85	10.01	0.08

28-09-2021 23:00	11.89	10.05	0.07
29-09-2021 00:00	11.91	11.8	0.12
29-09-2021 01:00	11.91	11.84	0.14
29-09-2021 02:00	11.87	11.87	0.15
29-09-2021 03:00	11.88	11.73	0.12
29-09-2021 04:00	11.88	11.78	0.16
29-09-2021 05:00	11.93	11.95	0.15
29-09-2021 06:00	11.92	11.81	0.14
29-09-2021 07:00	11.9	11.79	0.21
29-09-2021 08:00	11.89	11.8	0.15
29-09-2021 09:00	11.89	11.84	0.12
29-09-2021 10:00	11.86	11.89	0.11
29-09-2021 11:00	11.82	11.81	0.14
29-09-2021 12:00	11.75	11.76	0.14
29-09-2021 13:00	11.72	11.76	0.17
29-09-2021 14:00	11.71	11.76	0.09
29-09-2021 15:00	11.7	12.38	0.15
29-09-2021 16:00	11.7	12.35	0.1
29-09-2021 17:00	11.72	12.35	0.09
29-09-2021 18:00	11.73	12.31	0.1
29-09-2021 19:00	11.77	12.28	0.16
29-09-2021 20:00	11.75	12.39	0.1
29-09-2021 21:00	11.81	11.95	0.1
29-09-2021 22:00	11.82	11.76	0.18
29-09-2021 23:00	11.83	10.95	0.09
30-09-2021 00:00	11.84	11.23	0.16
30-09-2021 01:00	11.84	11.07	0.04
30-09-2021 02:00	11.83	11.49	0.12
30-09-2021 03:00	11.83	11.88	0.15
30-09-2021 04:00	11.88	11.79	0.08
30-09-2021 05:00	11.85	11.65	0.14
30-09-2021 06:00	11.87	11.52	0.17
30-09-2021 07:00	11.87	11.29	0.16
30-09-2021 08:00	11.87	11.07	0.18
30-09-2021 09:00	11.87	10.51	0.21
30-09-2021 10:00	11.85	10.31	0.04
30-09-2021 11:00	11.78	10.6	0.06
30-09-2021 12:00	11.75	10.48	0.15
30-09-2021 13:00	11.7	12.43	0.11
30-09-2021 14:00	11.67	10.5	0.16
30-09-2021 15:00	11.71	12.08	0.18
30-09-2021 16:00	11.72	12.04	0.08
30-09-2021 17:00	11.76	11.98	0.12
30-09-2021 18:00	11.78	11.88	0.08
30-09-2021 19:00	11.79	12.14	0.11
30-09-2021 20:00	11.79	12.19	0.13
30-09-2021 21:00	11.78	11.77	0.18
30-09-2021 22:00	11.82	11.95	0.15

30-09-2021 23:00	11.82	11.95	0.15

Period: 2021-10-01 00:00:00 to 2021-10-30 23:00:00

Date&Time (YYYY-MM-DD hh:mm:ss)	SCRUBBER 1 (pH)	SCRUBBER 2 (pH)	VOC (PPM)
01-10-2021 00:00	11.86	11.81	0.1
01-10-2021 01:00	11.87	12.25	0.17
01-10-2021 02:00	11.83	12.12	0.12
01-10-2021 03:00	11.84	12.33	0.13
01-10-2021 04:00	11.9	12.29	0.11
01-10-2021 05:00	11.85	12.31	0.08
01-10-2021 06:00	11.89	11.87	0.06
01-10-2021 07:00	11.85	11.92	0.07
01-10-2021 08:00	11.87	11.86	0.14
01-10-2021 09:00	11.84	12.25	0.12
01-10-2021 10:00	11.85	11.9	0.12
01-10-2021 11:00	11.82	12.13	0.05
01-10-2021 12:00	11.75	11.65	0.24
01-10-2021 13:00	11.72	11.34	0.07
01-10-2021 14:00	11.66	11.62	0.11
01-10-2021 15:00	11.68	11.18	0.09
01-10-2021 16:00	11.62	11.99	0.11
01-10-2021 17:00	11.69	11.09	0.14
01-10-2021 18:00	11.82	12.76	0.12
01-10-2021 19:00	11.86	12.45	0.15
01-10-2021 20:00	11.85	12.4	0.06
01-10-2021 21:00	11.89	12.13	0.09
01-10-2021 22:00	11.91	12.09	0.08
01-10-2021 23:00	11.92	12.24	0.1
02-10-2021 00:00	11.94	12.1	0.11
02-10-2021 01:00	11.85	12.2	0.1
02-10-2021 02:00	11.88	12.45	0.14
02-10-2021 03:00	11.91	12.27	0.08
02-10-2021 04:00	11.87	12.42	0.19
02-10-2021 05:00	11.9	12.27	0.23
02-10-2021 06:00	11.92	12.22	0.11
02-10-2021 07:00	11.87	12.39	0.11
02-10-2021 08:00	11.86	12.29	0.15
02-10-2021 09:00	11.89	12.39	0.09
02-10-2021 10:00	11.84	12.37	0.14
02-10-2021 11:00	11.79	12.25	0.18
02-10-2021 12:00	11.73	12.14	0.13
02-10-2021 13:00	11.7	12.37	0.08
02-10-2021 14:00	11.64	11.98	0.08
02-10-2021 15:00	11.6	11.43	0.14
02-10-2021 16:00	11.61	11.92	0.14
02-10-2021 17:00	11.6	11.79	0.19
02-10-2021 18:00	11.63	11.53	0.12
02-10-2021 19:00	11.66	11.52	0.14

02-10-2021 20:00	11.75	11.82	0.11
02-10-2021 21:00	11.81	12.05	0.16
02-10-2021 22:00	11.79	12.96	0.14
02-10-2021 23:00	11.81	12.03	0.14
03-10-2021 00:00	11.85	11.98	0.11
03-10-2021 01:00	11.83	12.11	0.13
03-10-2021 02:00	11.87	12.02	0.1
03-10-2021 03:00	11.86	11.99	0.18
03-10-2021 04:00	11.84	12.15	0.06
03-10-2021 05:00	11.89	12.05	0.15
03-10-2021 06:00	11.9	12.01	0.12
03-10-2021 07:00	11.86	12.25	0.11
03-10-2021 08:00	11.85	12.07	0.18
03-10-2021 09:00	11.87	12.63	0.14
03-10-2021 10:00	11.85	12.31	0.15
03-10-2021 11:00	11.79	12.17	0.16
03-10-2021 12:00	11.72	12.16	0.13
03-10-2021 13:00	11.7	12.08	0.08
03-10-2021 14:00	11.65	12.11	0.1
03-10-2021 15:00	11.62	11.72	0.13
03-10-2021 16:00	11.64	11.8	0.17
03-10-2021 17:00	11.6	11.65	0.06
03-10-2021 18:00	12.61	11.84	0.06
03-10-2021 19:00	12.7	11.74	0.13
03-10-2021 20:00	12.76	11.84	0.03
03-10-2021 21:00	12.75	11.91	0.09
03-10-2021 22:00	12.77	11.76	0.19
03-10-2021 23:00	12.82	12.02	0.09
04-10-2021 00:00	12.81	11.85	0.11
04-10-2021 01:00	12.84	11.89	0.19
04-10-2021 02:00	12.85	12.05	0.04
04-10-2021 03:00	12.83	12.11	0.04
04-10-2021 04:00	12.88	11.94	0.1
04-10-2021 05:00	11.44	12.05	0.17
04-10-2021 06:00	11.85	12.15	0.16
04-10-2021 07:00	11.87	12.21	0.34
04-10-2021 08:00	11.83	12.1	0.13
04-10-2021 09:00	11.82	12.02	0.14
04-10-2021 10:00	11.8	12.16	0.15
04-10-2021 11:00	11.79	12.24	0.19
04-10-2021 12:00	11.72	12.26	0.14
04-10-2021 13:00	11.67	12.06	0.19
04-10-2021 14:00	11.63	12.05	0.18
04-10-2021 15:00	11.61	12.25	0.13
04-10-2021 16:00	11.63	12.02	0.18
04-10-2021 17:00	11.62	12.05	0.07
04-10-2021 18:00	11.67	12.08	0.11
04-10-2021 19:00	11.72	12.11	0.1

04-10-2021 20:00	11.7	12.04	0.15
04-10-2021 21:00	11.72	12.19	0.18
04-10-2021 22:00	11.77	12.03	0.17
04-10-2021 23:00	11.79	12.16	0.11
05-10-2021 00:00	11.77	12.17	0.11
05-10-2021 01:00	11.83	12.22	0.09
05-10-2021 02:00	11.84	12.13	0.13
05-10-2021 03:00	11.82	12.24	0.13
05-10-2021 04:00	11.87	12.08	0.11
05-10-2021 05:00	11.85	12.12	0.12
05-10-2021 06:00	11.87	12.28	0.06
05-10-2021 07:00	11.89	12.2	0.1
05-10-2021 08:00	11.88	12.12	0.24
05-10-2021 09:00	12.11	12.29	0.12
05-10-2021 10:00	12.2	12.3	0.09
05-10-2021 11:00	12.1	12.18	0.12
05-10-2021 12:00	12.08	12.1	0.17
05-10-2021 13:00	12.1	12.17	0.26
05-10-2021 14:00	12.05	12.14	0.06
05-10-2021 15:00	12.09	12.23	0.14
05-10-2021 16:00	12.22	12.05	0.05
05-10-2021 17:00	12.16	12.12	0.07
05-10-2021 18:00	12.21	12.28	0.13
05-10-2021 19:00	12.19	12.06	0.13
05-10-2021 20:00	12.19	12.05	0.09
05-10-2021 21:00	12.19	12.13	0.06
05-10-2021 22:00	12.22	12.05	0.2
05-10-2021 23:00	12.21	12.28	0.11
06-10-2021 00:00	12.23	12.29	0.13
06-10-2021 01:00	12.19	12.17	0.14
06-10-2021 02:00	12.24	12.25	0.18
06-10-2021 03:00	12.19	12.13	0.18
06-10-2021 04:00	12.2	12.29	0.12
06-10-2021 05:00	12.29	12.34	0.09
06-10-2021 06:00	12.25	12.14	0.13
06-10-2021 07:00	12.29	12.17	0.03
06-10-2021 08:00	12.26	12.32	0.18
06-10-2021 09:00	12.24	12.22	0.15
06-10-2021 10:00	12.23	12.24	0.04
06-10-2021 11:00	12.25	12.13	0.19
06-10-2021 12:00	12.2	12.22	0.19
06-10-2021 13:00	12.19	12.1	0.13
06-10-2021 14:00	12.15	12.36	0.13
06-10-2021 15:00	12.14	12.31	0.15
06-10-2021 16:00	12.1	12.21	0.05
06-10-2021 17:00	12.1	12.1	0.04
06-10-2021 18:00	12.08	12.31	0.13
06-10-2021 19:00	12.09	12.11	0.15

06-10-2021 20:00	12.09	12.12	0.09
06-10-2021 21:00	12.06	12.11	0.04
06-10-2021 22:00	12.06	12.11	0.14
06-10-2021 23:00	12.04	12.12	0.13
07-10-2021 00:00	12.25	12.29	0.03
07-10-2021 01:00	12.21	12.35	0.1
07-10-2021 02:00	12.14	12.39	0.05
07-10-2021 03:00	12.15	12.41	0.12
07-10-2021 04:00	12.19	12.4	0.18
07-10-2021 05:00	12.19	12.15	0.16
07-10-2021 06:00	12.17	12.37	0.13
07-10-2021 07:00	12.16	12.17	0.09
07-10-2021 08:00	12.13	12.21	0.1
07-10-2021 09:00	12.1	12.12	0.26
07-10-2021 10:00	12.12	12.27	0.13
07-10-2021 11:00	12.04	12.36	0.16
07-10-2021 12:00	12.02	12.23	0.06
07-10-2021 13:00	12.01	12.32	0.1
07-10-2021 14:00	12.04	12.08	0.11
07-10-2021 15:00	12.09	12.2	0.05
07-10-2021 16:00	12.12	12.31	0.18
07-10-2021 17:00	11.98	12.16	0.06
07-10-2021 18:00	11.99	12.11	0.14
07-10-2021 19:00	11.87	12.16	0.1
07-10-2021 20:00	11.97	12.24	0.11
07-10-2021 21:00	11.95	12.27	0.13
07-10-2021 22:00	11.96	12.02	0.13
07-10-2021 23:00	11.98	12.05	0.12
08-10-2021 00:00	12.05	12.3	0.15
08-10-2021 01:00	12.09	12.31	0.15
08-10-2021 02:00	12.07	12.18	0.12
08-10-2021 03:00	12.03	12.14	0.12
08-10-2021 04:00	12.06	12.2	0.14
08-10-2021 05:00	12.04	12.1	0.09
08-10-2021 06:00	12.09	12.21	0.2
08-10-2021 07:00	12.09	12.34	0.11
08-10-2021 08:00	12.09	12.28	0.05
08-10-2021 09:00	12.02	12.12	0.13
08-10-2021 10:00	12.01	12.06	0.09
08-10-2021 11:00	12.02	12.06	0.2
08-10-2021 12:00	11.99	12.12	0.15
08-10-2021 13:00	12.03	12.06	0.21
08-10-2021 14:00	11.98	12.04	0.11
08-10-2021 15:00	11.96	12.03	0.15
08-10-2021 16:00	11.93	12.03	0.13
08-10-2021 17:00	11.98	12.13	0.1
08-10-2021 18:00	12.05	11.61	0.21
08-10-2021 19:00	12.01	12.17	0.11

08-10-2021 20:00	12.06	12.17	0.19
08-10-2021 21:00	12.05	11.89	0.1
08-10-2021 22:00	12.04	11.73	0.22
08-10-2021 23:00	12.07	12.21	0.13
09-10-2021 00:00	12.04	11.54	0.08
09-10-2021 01:00	12.07	11.84	0.15
09-10-2021 02:00	12.09	11.54	0.09
09-10-2021 03:00	12.08	11.44	0.11
09-10-2021 04:00	12.08	12.14	0.13
09-10-2021 05:00	12.07	12.36	0.09
09-10-2021 06:00	12.1	12.22	0.08
09-10-2021 07:00	12.07	12.1	0.15
09-10-2021 08:00	12.12	12.01	0.19
09-10-2021 09:00	12.13	12.03	0.06
09-10-2021 10:00	12.13	12.08	0.15
09-10-2021 11:00	12.12	11.05	0.19
09-10-2021 12:00	12.06	11.8	0.14
09-10-2021 13:00	12.09	12.16	0.14
09-10-2021 14:00	12.51	11.81	0.1
09-10-2021 15:00	12.67	11.76	0.05
09-10-2021 16:00	12.67	11.9	0.12
09-10-2021 17:00	12.77	11.62	0.1
09-10-2021 18:00	12.74	11.81	0.19
09-10-2021 19:00	12.71	12.28	0.15
09-10-2021 20:00	12.73	12.37	0.12
09-10-2021 21:00	12.77	12.26	0.08
09-10-2021 22:00	12.74	12.19	0.19
09-10-2021 23:00	12.76	12.25	0.16
10-10-2021 00:00	12.71	12.21	0.14
10-10-2021 01:00	12.75	12.11	0.06
10-10-2021 02:00	12.7	11.41	0.15
10-10-2021 03:00	12.71	12.06	0.13
10-10-2021 04:00	12.69	12.03	0.15
10-10-2021 05:00	12.71	11.96	0.1
10-10-2021 06:00	12.74	11.74	0.1
10-10-2021 07:00	12.77	11.93	0.09
10-10-2021 08:00	12.75	11.66	0.14
10-10-2021 09:00	12.71	12.18	0.14
10-10-2021 10:00	12.72	12.19	0.15
10-10-2021 11:00	12.68	12.02	0.15
10-10-2021 12:00	12.64	10.32	0.16
10-10-2021 13:00	12.66	10.51	0.07
10-10-2021 14:00	12.57	10.85	0.11
10-10-2021 15:00	12.57	10.91	0.14
10-10-2021 16:00	12.59	10.94	0.13
10-10-2021 17:00	12.64	11.01	0.09
10-10-2021 18:00	12.63	11.37	0.19
10-10-2021 19:00	12.7	11.85	0.24

10-10-2021 20:00	12.65	11.98	0.15
10-10-2021 21:00	12.69	11.22	0.18
10-10-2021 22:00	12.67	12.7	0.13
10-10-2021 23:00	12.69	12.18	0.14
11-10-2021 00:00	12.66	12.3	0.15
11-10-2021 01:00	12.71	12.11	0.16
11-10-2021 02:00	12.75	12.06	0.17
11-10-2021 03:00	12.73	11.97	0.12
11-10-2021 04:00	12.71	11.89	0.08
11-10-2021 05:00	12.73	11.59	0.12
11-10-2021 06:00	12.77	11.2	0.12
11-10-2021 07:00	12.73	12.18	0.12
11-10-2021 08:00	12.71	11.95	0.1
11-10-2021 09:00	12.71	11.11	0.13
11-10-2021 10:00	12.66	11.23	0.13
11-10-2021 11:00	12.68	11.57	0.11
11-10-2021 12:00	12.67	10.21	0.13
11-10-2021 13:00	12.62	10.25	0.19
11-10-2021 14:00	12.66	10.99	0.18
11-10-2021 15:00	12.68	10.37	0.06
11-10-2021 16:00	12.57	10.83	0.14
11-10-2021 17:00	12.56	11.75	0.12
11-10-2021 18:00	12.54	11.56	0.18
11-10-2021 19:00	12.51	10.23	0.21
11-10-2021 20:00	12.48	11.19	0.18
11-10-2021 21:00	12.49	11.07	0.21
11-10-2021 22:00	12.48	11.72	0.18
11-10-2021 23:00	12.52	11.01	0.09
12-10-2021 00:00	12.53	11.92	0.12
12-10-2021 01:00	12.58	11.21	0.19
12-10-2021 02:00	12.59	10.42	0.11
12-10-2021 03:00	12.56	11.29	0.13
12-10-2021 04:00	12.53	10.86	0.15
12-10-2021 05:00	12.57	10.96	0.24
12-10-2021 06:00	12.71	10.53	0.01
12-10-2021 07:00	12.67	10.66	0.13
12-10-2021 08:00	12.66	10.27	0.1
12-10-2021 09:00	12.61	11.42	0.14
12-10-2021 10:00	12.62	11.9	0.07
12-10-2021 11:00	12.63	11.19	0.17
12-10-2021 12:00	12.56	11.85	0.07
12-10-2021 13:00	12.6	12.33	0.23
12-10-2021 14:00	12.55	12.54	0.2
12-10-2021 15:00	12.59	12.45	0.02
12-10-2021 16:00	12.54	12.31	0.19
12-10-2021 17:00	12.55	12.38	0.2
12-10-2021 18:00	12.52	12.07	0.11
12-10-2021 19:00	12.57	12.11	0.15

12-10-2021 20:00	12.59	11.97	0.15
12-10-2021 21:00	12.77	11.99	0.08
12-10-2021 22:00	12.79	12.11	0.13
12-10-2021 23:00	12.76	12.03	0.16
13-10-2021 00:00	12.82	12.05	0.18
13-10-2021 01:00	12.79	11.86	0.15
13-10-2021 02:00	12.77	11.86	0.2
13-10-2021 03:00	12.76	12.11	0.09
13-10-2021 04:00	12.78	12.06	0.15
13-10-2021 05:00	12.79	11.92	0.15
13-10-2021 06:00	12.75	11.85	0.14
13-10-2021 07:00	12.74	11.85	0.16
13-10-2021 08:00	12.72	12.01	0.12
13-10-2021 09:00	12.64	11.83	0.23
13-10-2021 10:00	12.58	11.83	0.01
13-10-2021 11:00	12.56	12.03	0.15
13-10-2021 12:00	12.62	11.81	0.14
13-10-2021 13:00	12.7	11.92	0.07
13-10-2021 14:00	12.72	11.81	0.1
13-10-2021 15:00	12.66	11.97	0.27
13-10-2021 16:00	12.6	11.82	0.1
13-10-2021 17:00	12.61	12.02	0.05
13-10-2021 18:00	12.64	12.02	0.21
13-10-2021 19:00	12.6	11.84	0.14
13-10-2021 20:00	12.6	11.97	0.18
13-10-2021 21:00	12.62	11.86	0.19
13-10-2021 22:00	12.66	11.76	0.09
13-10-2021 23:00	12.68	11.92	0.11
14-10-2021 00:00	12.71	11.94	0.09
14-10-2021 01:00	12.81	11.99	0.11
14-10-2021 02:00	12.83	11.91	0.2
14-10-2021 03:00	12.86	11.8	0.11
14-10-2021 04:00	12.87	11.77	0.13
14-10-2021 05:00	12.86	11.76	0.11
14-10-2021 06:00	12.83	12.01	0.13
14-10-2021 07:00	12.88	11.89	0.17
14-10-2021 08:00	12.84	11.98	0.16
14-10-2021 09:00	12.78	11.96	0.16
14-10-2021 10:00	12.79	11.93	0.16
14-10-2021 11:00	12.76	11.83	0.16
14-10-2021 12:00	12.72	11.74	0.15
14-10-2021 13:00	12.74	11.94	0.06
14-10-2021 14:00	12.75	11.94	0.14
14-10-2021 15:00	12.73	11.89	0.16
14-10-2021 16:00	12.85	11.85	0.11
14-10-2021 17:00	12.79	11.95	0.16
14-10-2021 18:00	12.61	11.86	0.17
14-10-2021 19:00	12.58	11.8	0.19

14-10-2021 20:00	12.55	11.97	0.17
14-10-2021 21:00	12.63	11.92	0.28
14-10-2021 22:00	12.6	11.9	0.14
14-10-2021 23:00	12.58	11.78	0.13
15-10-2021 00:00	12.54	11.86	0.2
15-10-2021 01:00	12.53	11.82	0.1
15-10-2021 02:00	12.51	11.95	1.09
15-10-2021 03:00	12.41	12.05	0.15
15-10-2021 04:00	12.43	11.83	0
15-10-2021 05:00	12.46	11.84	0.15
15-10-2021 06:00	12.54	11.88	0.12
15-10-2021 07:00	12.55	11.93	0.02
15-10-2021 08:00	12.58	12.08	0.05
15-10-2021 09:00	12.57	12.07	0.19
15-10-2021 10:00	12.6	12.07	0.17
15-10-2021 11:00	12.58	11.84	0.16
15-10-2021 12:00	12.68	11.85	0.18
15-10-2021 13:00	12.71	11.81	0.16
15-10-2021 14:00	12.7	11.87	0.13
15-10-2021 15:00	12.72	11.82	0.12
15-10-2021 16:00	12.68	11.92	0.2
15-10-2021 17:00	12.63	11.77	0.14
15-10-2021 18:00	12.57	11.76	0.18
15-10-2021 19:00	12.52	12.32	0.2
15-10-2021 20:00	12.55	11.84	0.15
15-10-2021 21:00	12.58	11.8	0.19
15-10-2021 22:00	12.66	11.82	0.15
15-10-2021 23:00	12.62	12.03	0.16
16-10-2021 00:00	12.67	11.91	0.09
16-10-2021 01:00	12.71	11.92	0.17
16-10-2021 02:00	12.67	12.09	0.21
16-10-2021 03:00	12.72	11.87	0.16
16-10-2021 04:00	12.76	12.09	0.18
16-10-2021 05:00	12.77	12.06	0.15
16-10-2021 06:00	12.82	11.9	0.13
16-10-2021 07:00	12.84	11.9	0.06
16-10-2021 08:00	12.83	12.08	0.14
16-10-2021 09:00	12.78	12.05	0.12
16-10-2021 10:00	12.8	12.14	0.09
16-10-2021 11:00	12.77	12.03	0.1
16-10-2021 12:00	12.76	12.13	0.03
16-10-2021 13:00	12.81	12.03	0.15
16-10-2021 14:00	12.75	11.92	0.08
16-10-2021 15:00	12.72	11.84	0.13
16-10-2021 16:00	12.69	11.88	0.15
16-10-2021 17:00	12.67	12.04	0.14
16-10-2021 18:00	12.69	11.82	0.14
16-10-2021 19:00	12.63	11.82	0.06

16-10-2021 20:00	12.64	11.95	0.16
16-10-2021 21:00	12.68	11.97	0.13
16-10-2021 22:00	12.66	12.05	0.2
16-10-2021 23:00	12.73	11.86	0.09
17-10-2021 00:00	12.72	11.95	0.1
17-10-2021 01:00	12.7	11.88	0.12
17-10-2021 02:00	12.74	12.02	0.18
17-10-2021 03:00	12.76	11.92	0.11
17-10-2021 04:00	12.77	12.13	0.09
17-10-2021 05:00	12.76	11.95	0.11
17-10-2021 06:00	12.73	11.94	0.1
17-10-2021 07:00	12.8	12.14	0.09
17-10-2021 08:00	12.77	12.17	0.16
17-10-2021 09:00	12.78	12.03	0.07
17-10-2021 10:00	12.75	12.13	0.1
17-10-2021 11:00	12.71	12.15	0.17
17-10-2021 12:00	12.75	12.05	0.19
17-10-2021 13:00	12.79	12.05	0.21
17-10-2021 14:00	12.76	11.94	0.09
17-10-2021 15:00	12.74	12.08	0.12
17-10-2021 16:00	12.76	12.05	0.17
17-10-2021 17:00	12.74	12.13	0.09
17-10-2021 18:00	12.73	12.15	0.17
17-10-2021 19:00	12.78	12.06	0.18
17-10-2021 20:00	12.69	12.2	0.02
17-10-2021 21:00	12.72	11.96	0.07
17-10-2021 22:00	12.75	11.97	0.14
17-10-2021 23:00	12.76	11.98	0.15
18-10-2021 00:00	12.78	11.99	0.14
18-10-2021 01:00	12.77	12.01	1.13
18-10-2021 02:00	12.8	12.03	0.15
18-10-2021 03:00	12.7	12.04	0.14
18-10-2021 04:00	12.81	12.03	0.16
18-10-2021 05:00	12.83	12.27	0.11
18-10-2021 06:00	12.79	12.16	0.17
18-10-2021 07:00	12.82	12.11	0.19
18-10-2021 08:00	12.81	12.19	0.15
18-10-2021 09:00	12.76	12.09	0.18
18-10-2021 10:00	12.74	12.14	0.02
18-10-2021 11:00	12.77	12.29	0.17
18-10-2021 12:00	12.76	12.07	0.01
18-10-2021 13:00	12.82	12.27	0.04
18-10-2021 14:00	12.78	12.14	0.19
18-10-2021 15:00	12.73	12.25	0.05
18-10-2021 16:00	12.71	12.18	0.17
18-10-2021 17:00	12.74	12.07	0.2
18-10-2021 18:00	12.69	11.99	0.12
18-10-2021 19:00	12.64	12.14	0.12

18-10-2021 20:00	12.7	12.12	0.11
18-10-2021 21:00	12.72	12.21	0.08
18-10-2021 22:00	12.76	12.23	0.14
18-10-2021 23:00	12.79	12.24	0.21
19-10-2021 00:00	12.77	12.25	0.13
19-10-2021 01:00	12.78	12.27	0.15
19-10-2021 02:00	12.83	12.26	0.16
19-10-2021 03:00	12.8	12.05	0.17
19-10-2021 04:00	12.82	12.23	0.21
19-10-2021 05:00	12.87	12.07	0.15
19-10-2021 06:00	12.86	12.09	0.13
19-10-2021 07:00	12.88	12.26	0.14
19-10-2021 08:00	12.86	12.32	0.05
19-10-2021 09:00	12.85	12.11	0.13
19-10-2021 10:00	12.83	12.26	0.14
19-10-2021 11:00	12.78	12.19	0.13
19-10-2021 12:00	12.77	12.26	0.18
19-10-2021 13:00	12.73	12.13	0.13
19-10-2021 14:00	12.75	12.08	0.17
19-10-2021 15:00	12.78	12.3	0.15
19-10-2021 16:00	12.72	12.05	0.08
19-10-2021 17:00	12.68	12.19	0.16
19-10-2021 18:00	12.66	12.08	0.15
19-10-2021 19:00	12.68	12.31	0.09
19-10-2021 20:00	12.67	12.18	0.21
19-10-2021 21:00	12.6	12.08	0.23
19-10-2021 22:00	12.71	12.18	0.1
19-10-2021 23:00	12.74	12.3	0.09
20-10-2021 00:00	12.78	12.2	0.17
20-10-2021 01:00	12.76	12.09	0.09
20-10-2021 02:00	12.71	12.09	0.13
20-10-2021 03:00	12.81	12.11	0.12
20-10-2021 04:00	12.79	12.14	0.12
20-10-2021 05:00	12.83	12.37	0.06
20-10-2021 06:00	12.82	12.3	0.1
20-10-2021 07:00	12.87	12.39	0.17
20-10-2021 08:00	12.83	12.31	0.23
20-10-2021 09:00	12.83	12.31	0.09
20-10-2021 10:00	12.82	12.39	0.15
20-10-2021 11:00	12.81	12.25	0.1
20-10-2021 12:00	12.76	12.13	0.12
20-10-2021 13:00	12.77	12.31	0.05
20-10-2021 14:00	12.72	12.28	0.08
20-10-2021 15:00	12.71	12.21	0.12
20-10-2021 16:00	12.67	12.04	0.06
20-10-2021 17:00	12.66	12.03	0.11
20-10-2021 18:00	12.64	12.19	0.09
20-10-2021 19:00	12.75	12.02	0.12

20-10-2021 20:00	12.91	12.07	0.03
20-10-2021 21:00	12.9	12.29	0.16
20-10-2021 22:00	12.93	12.09	0.2
20-10-2021 23:00	12.95	12.07	0.09
21-10-2021 00:00	12.85	12.26	0.13
21-10-2021 01:00	12.97	12.3	0.11
21-10-2021 02:00	12.89	12.3	0.07
21-10-2021 03:00	12.84	12.21	0.12
21-10-2021 04:00	12.87	12.27	0.18
21-10-2021 05:00	12.85	12.31	0.11
21-10-2021 06:00	12.82	12.09	0.08
21-10-2021 07:00	12.85	12.1	0.09
21-10-2021 08:00	12.83	12.1	0.11
21-10-2021 09:00	12.78	12.14	0.21
21-10-2021 10:00	12.74	12.1	0.14
21-10-2021 11:00	11.22	12.1	0.15
21-10-2021 12:00	11.83	12.15	0.13
21-10-2021 13:00	11.73	12.21	0.12
21-10-2021 14:00	11.77	12.06	0.16
21-10-2021 15:00	11.79	12.24	0.06
21-10-2021 16:00	11.76	12.13	0.04
21-10-2021 17:00	11.78	12.21	0.16
21-10-2021 18:00	11.81	12.05	0.14
21-10-2021 19:00	11.82	12.2	0.12
21-10-2021 20:00	11.84	12.28	0.15
21-10-2021 21:00	11.85	12.07	0.21
21-10-2021 22:00	11.87	12.18	0.12
21-10-2021 23:00	11.89	12.28	0.14
22-10-2021 00:00	11.89	12.12	0.05
22-10-2021 01:00	11.88	12.09	0.11
22-10-2021 02:00	11.92	12.14	0.06
22-10-2021 03:00	11.88	12.2	0.12
22-10-2021 04:00	12.13	12.28	0.13
22-10-2021 05:00	10.12	12.31	0.04
22-10-2021 06:00	10.23	12.17	0.11
22-10-2021 07:00	10.27	12.39	0.13
22-10-2021 08:00	10.38	12.17	0.18
22-10-2021 09:00	10.43	12.21	0.1
22-10-2021 10:00	10.51	12.17	0.02
22-10-2021 11:00	10.62	12.24	0.16
22-10-2021 12:00	10.69	12.23	0.13
22-10-2021 13:00	10.76	12.19	0.09
22-10-2021 14:00	10.81	12.16	0.08
22-10-2021 15:00	10.87	12.15	0.09
22-10-2021 16:00	11	12.1	0.18
22-10-2021 17:00	11.08	12.3	0.11
22-10-2021 18:00	11.17	12.31	0.15
22-10-2021 19:00	11.31	12.2	0.2

M/S GIFLON DRUGS
RACHANAPALLY

22-10-2021 20:00	11.38	12.1	0.12
22-10-2021 21:00	11.41	12.23	0.05
22-10-2021 22:00	11.45	12.12	0.15
22-10-2021 23:00	11.51	12.11	0.17
23-10-2021 00:00	11.52	12.31	0.06
23-10-2021 01:00	11.56	12.34	0.07
23-10-2021 02:00	11.58	12.29	0.12
23-10-2021 03:00	11.6	12.37	0.13
23-10-2021 04:00	11.63	12.17	0.1
23-10-2021 05:00	11.63	12.13	0.02
23-10-2021 06:00	11.67	12.38	0.21
23-10-2021 07:00	11.65	12.16	0.13
23-10-2021 08:00	11.65	12.28	0.17
23-10-2021 09:00	11.61	12.15	0.17
23-10-2021 10:00	11.58	12.21	0.24
23-10-2021 11:00	11.53	12.33	0.12
23-10-2021 12:00	11.49	12.16	0.05
23-10-2021 14:00	11.48	12.2	0.03
23-10-2021 16:00	11.5	10.27	0.12
23-10-2021 17:00	11.51	10.41	0.09
23-10-2021 18:00	11.57	10.44	0.11
23-10-2021 19:00	11.64	10.52	0.2
23-10-2021 20:00	11.68	10.63	0.18
23-10-2021 21:00	11.7	10.68	0.17
23-10-2021 22:00	11.74	10.72	0.3
23-10-2021 23:00	11.76	10.88	0.8
24-10-2021 00:00	11.87	10.94	0.79
24-10-2021 01:00	11.82	11.14	1.09
24-10-2021 02:00	11.83	11.16	1.59
24-10-2021 03:00	11.87	11.24	1.11
24-10-2021 04:00	11.83	11.26	1.28
24-10-2021 05:00	11.82	11.31	1.45
24-10-2021 06:00	11.84	11.48	1.12
24-10-2021 07:00	11.38	11.22	1.42
24-10-2021 08:00	11.83	11.26	1.65
24-10-2021 09:00	11.76	11.43	0.52
24-10-2021 10:00	11.75	11.7	0.54
24-10-2021 11:00	11.64	11.88	0.25
24-10-2021 12:00	11.59	11.87	1.2
24-10-2021 13:00	11.57	11.96	1.55
24-10-2021 14:00	11.55	10.33	0.71
24-10-2021 15:00	11.53	10.19	1.04
24-10-2021 16:00	11.68	10.26	0.99
24-10-2021 17:00	11.73	10.37	1.14
24-10-2021 18:00	11.76	10.54	1.86
24-10-2021 19:00	11.71	10.85	2.27
24-10-2021 20:00	11.75	11.14	2.43
24-10-2021 21:00	11.74	11.27	2.66

24-10-2021 22:00	11.79	11.39	2.83
24-10-2021 23:00	11.82	11.54	3.01
25-10-2021 00:00	11.79	11.68	2.89
25-10-2021 01:00	11.75	11.92	2.77
25-10-2021 02:00	11.78	11.94	2.9
25-10-2021 03:00	11.71	11.94	3.07
25-10-2021 04:00	11.74	11.95	2.62
25-10-2021 05:00	11.77	12.15	3.02
25-10-2021 06:00	11.74	12.19	2.94
25-10-2021 07:00	11.73	12.22	3.04
25-10-2021 08:00	11.75	12.29	3.05
25-10-2021 09:00	11.64	12.32	2.93
25-10-2021 10:00	11.54	12.4	2.76
25-10-2021 11:00	11.53	12.46	2.24
25-10-2021 12:00	11.51	12.47	1.41
25-10-2021 13:00	11.52	12.47	1.78
25-10-2021 14:00	11.52	12.35	1.07
25-10-2021 15:00	11.55	12.27	0.69
25-10-2021 16:00	11.06	11.78	0.66
25-10-2021 17:00	11.1	11.86	0.47
25-10-2021 18:00	11.17	11.98	0.32
25-10-2021 19:00	11.26	11.87	0.19
25-10-2021 20:00	11.27	11.95	0.29
25-10-2021 21:00	11.29	11.95	0.41
25-10-2021 22:00	11.33	11.82	0.45
25-10-2021 23:00	11.36	11.79	0.6
26-10-2021 00:00	11.4	11.72	0.81
26-10-2021 01:00	11.43	11.85	0.8
26-10-2021 02:00	11.41	11.81	0.82
26-10-2021 03:00	11.46	11.87	1.01
26-10-2021 04:00	11.47	11.76	1
26-10-2021 05:00	11.45	11.76	1.14
26-10-2021 06:00	11.47	11.75	0.9
26-10-2021 07:00	11.46	11.81	0.9
26-10-2021 08:00	11.44	11.79	0.72
26-10-2021 09:00	11.39	12.81	0.76
26-10-2021 10:00	11.34	12.83	0.95
26-10-2021 11:00	11.24	12.61	2.57
26-10-2021 12:00	11.21	12.62	1.14
26-10-2021 13:00	11.2	12.72	1.68
26-10-2021 14:00	11.13	12.65	2.04
26-10-2021 15:00	11.1	12.72	0.95
26-10-2021 16:00	11.09	10.55	1.18
26-10-2021 17:00	11.07	10.87	0.47
26-10-2021 18:00	11.16	11.53	0.12
26-10-2021 19:00	11.17	12.43	0.41
26-10-2021 20:00	11.19	12.18	0.54
26-10-2021 21:00	11.26	11.39	1.4

26-10-2021 22:00	11.28	12.23	1.05
26-10-2021 23:00	11.31	12.25	0.8
27-10-2021 00:00	11.35	11.93	0.63
27-10-2021 01:00	11.33	11.99	0.34
27-10-2021 02:00	11.36	11.85	0.7
27-10-2021 03:00	11.36	12.03	0.92
27-10-2021 04:00	11.42	12.01	1.58
27-10-2021 05:00	11.41	11.96	1.75
27-10-2021 06:00	11.42	11.81	0.91
27-10-2021 07:00	11.45	11.87	0.81
27-10-2021 08:00	11.46	12.08	0.96
27-10-2021 09:00	12.11	11.96	0.95
27-10-2021 10:00	12.32	12.1	0.78
27-10-2021 11:00	12.28	12.11	0.18
27-10-2021 12:00	12.24	12.06	0.22
27-10-2021 13:00	12.19	12.01	0.28
27-10-2021 14:00	12.15	12.07	0.17
27-10-2021 15:00	12.22	11.94	0.19
27-10-2021 16:00	12.33	12.08	0.13
27-10-2021 17:00	12.38	12.03	0.21
27-10-2021 18:00	12.53	12.11	0.35
27-10-2021 19:00	12.57	12.12	0.09
27-10-2021 20:00	12.57	12.08	0.17
27-10-2021 21:00	12.59	12.56	0.19
27-10-2021 22:00	12.56	11.32	0.19
27-10-2021 23:00	12.57	11.74	0.27
28-10-2021 00:00	12.63	11.74	0.39
28-10-2021 01:00	12.64	11.75	0.25
28-10-2021 02:00	12.61	11.53	0.32
28-10-2021 03:00	12.63	11.41	0.3
28-10-2021 04:00	12.68	11.32	0.18
28-10-2021 05:00	12.7	11.16	0.18
28-10-2021 06:00	12.74	11.36	0.24
28-10-2021 07:00	12.71	10.57	0.34
28-10-2021 08:00	12.75	10.31	0.04
28-10-2021 09:00	12.74	10.86	0.29
28-10-2021 10:00	12.84	10.96	0.09
28-10-2021 11:00	12.78	11.04	0.23
28-10-2021 12:00	12.69	11.15	0.24
28-10-2021 13:00	12.64	11.04	0.04
28-10-2021 14:00	12.59	10.82	0.63
28-10-2021 15:00	12.6	10.66	0.93
28-10-2021 16:00	12.58	10.47	1.67
28-10-2021 17:00	12.6	10.09	0.62
28-10-2021 18:00	12.58	10.47	0.43
28-10-2021 19:00	12.6	10.59	0.62
28-10-2021 20:00	12.57	10.49	0.76
28-10-2021 21:00	12.6	10.46	0.1

28-10-2021 22:00	12.57	10.41	0.13
28-10-2021 23:00	12.62	10.51	0.13
29-10-2021 00:00	12.6	10.61	0.15
29-10-2021 01:00	12.61	10.56	0.14
29-10-2021 02:00	12.64	10.57	0.15
29-10-2021 03:00	12.61	11.36	0.22
29-10-2021 04:00	12.65	11.33	0.21
29-10-2021 05:00	12.64	11.47	0.16
29-10-2021 06:00	12.66	11.87	0.27
29-10-2021 07:00	12.68	11.49	0.21
29-10-2021 08:00	12.66	11.66	0.24
29-10-2021 09:00	12.67	11.51	0.25
29-10-2021 10:00	12.64	11.42	0.18
29-10-2021 11:00	12.6	11.47	0.22
29-10-2021 12:00	12.59	11.33	0.24
29-10-2021 13:00	12.62	11.32	0.17
29-10-2021 14:00	12.73	11.44	0.22
29-10-2021 15:00	12.72	11.29	0.28
29-10-2021 16:00	12.68	11.26	0.24
29-10-2021 17:00	12.66	11.13	0.23
29-10-2021 18:00	12.67	11.12	0.27
29-10-2021 19:00	12.73	10.91	0.26
29-10-2021 20:00	12.68	11.17	0.24
29-10-2021 21:00	12.72	10.99	0.17
29-10-2021 22:00	12.73	10.94	0.2
29-10-2021 23:00	12.72	10.84	0.16
30-10-2021 00:00	12.72	10.38	0.19
30-10-2021 01:00	12.72	10.2	0.16
30-10-2021 02:00	12.68	10.35	0.24
30-10-2021 03:00	12.63	10.22	0.31
30-10-2021 04:00	12.67	10.13	0.29
30-10-2021 05:00	12.67	10.17	0.27
30-10-2021 06:00	12.66	10.02	0.2
30-10-2021 07:00	12.65	10.02	0.28
30-10-2021 08:00	12.64	10.04	0.23
30-10-2021 09:00	12.58	10.14	0.23
30-10-2021 10:00	12.59	10.29	0.25
30-10-2021 11:00	12.58	10.32	0.2
30-10-2021 12:00	12.56	10.12	0.17
30-10-2021 13:00	12.57	10.11	0.25
30-10-2021 14:00	12.55	10.1	0.19
30-10-2021 15:00	12.8	10.14	0.21
30-10-2021 16:00	12.82	10.12	0.03
30-10-2021 17:00	12.85	10.32	0.22
30-10-2021 18:00	12.84	10.45	0.15
30-10-2021 19:00	12.86	10.54	0.2
30-10-2021 20:00	12.86	10.67	0.21
30-10-2021 21:00	12.85	10.73	0.25

30-10-2021 22:00	12.88	10.88	0.21
30-10-2021 23:00	12.86	10.82	0.25
31-10-2021 00:00	12.89	10.88	0.22
31-10-2021 01:00	12.92	10.98	0.3
31-10-2021 02:00	12.92	11.18	0.25
31-10-2021 03:00	12.95	11.21	0.28
31-10-2021 04:00	12.97	11.38	0.35
31-10-2021 05:00	12.95	11.48	0.18
31-10-2021 06:00	12.98	11.55	0.23
31-10-2021 07:00	12.99	11.53	0.36
31-10-2021 08:00	12.96	11.67	0.16
31-10-2021 09:00	12.95	11.75	0.25
31-10-2021 10:00	12.89	11.78	0.25
31-10-2021 11:00	12.87	11.79	0.32
31-10-2021 12:00	12.86	11.83	0.23
31-10-2021 13:00	12.84	11.81	0.27
31-10-2021 14:00	12.86	11.87	0.16
31-10-2021 15:00	12.83	11.94	0.14
31-10-2021 16:00	12.78	12.16	0.13
31-10-2021 17:00	12.75	12.25	0.17
31-10-2021 18:00	12.77	12.16	0.08
31-10-2021 19:00	12.83	12.2	0.16
31-10-2021 20:00	12.84	12.31	0.1
31-10-2021 21:00	12.85	12.28	0.18
31-10-2021 22:00	12.86	12.28	0.1
31-10-2021 23:00	12.87	12.39	0.26

M/S SIFLON DRUGS RACHANA

Date&Time (YYYY-MM-DD hh:mm:ss)	SCRUBBER 1 (pH)	SCRUBBER 2 (pH)	VOC (PPM)
01-11-2021 00:00	12.92	10.23	0.2
01-11-2021 01:00	12.91	10.24	0.14
01-11-2021 02:00	12.92	10.32	0.26
01-11-2021 03:00	12.96	10.36	0.15
01-11-2021 04:00	12.96	10.43	0.26
01-11-2021 05:00	12.99	10.67	0.23
01-11-2021 06:00	12.96	10.81	0.19
01-11-2021 07:00	12.98	10.96	0.3
01-11-2021 08:00	13.01	11.2	0.39
01-11-2021 09:00	13.13	11.17	0.57
01-11-2021 10:00	13.29	11.33	0.46
01-11-2021 11:00	13.34	11.44	0.65
01-11-2021 12:00	13.59	11.44	0.57
01-11-2021 13:00	13.85	11.45	0.15
01-11-2021 14:00	13.86	11.55	0.23
01-11-2021 15:00	13.85	11.79	0.2
01-11-2021 16:00	13.87	11.87	0.24
01-11-2021 17:00	13.86	11.68	0.21
01-11-2021 18:00	13.89	11.79	0.22
01-11-2021 19:00	10.01	11.99	0.27
01-11-2021 20:00	10.15	12.12	0.31
01-11-2021 21:00	10.26	12.28	0.22
01-11-2021 22:00	10.26	12.31	0.25
01-11-2021 23:00	10.24	12.44	0.25
02-11-2021 00:00	10.36	12.57	0.18
02-11-2021 01:00	10.36	12.61	0.27
02-11-2021 02:00	10.38	12.79	0.16
02-11-2021 03:00	10.45	12.71	0.34
02-11-2021 04:00	10.53	12.88	0.37
02-11-2021 05:00	10.72	12.88	0.22
02-11-2021 06:00	10.73	12.76	0.27
02-11-2021 07:00	10.73	12.87	0.25
02-11-2021 08:00	10.81	12.91	0.22
02-11-2021 09:00	10.86	13.22	0.24
02-11-2021 10:00	10.83	13.36	0.27
02-11-2021 11:00	10.84	13.55	0.25
02-11-2021 12:00	10.86	10.15	0.13
02-11-2021 13:00	10.92	10.27	0.3
02-11-2021 14:00	10.84	10.31	0.22
02-11-2021 15:00	10.86	10.53	0.24
02-11-2021 16:00	10.82	10.54	0.2
02-11-2021 17:00	10.8	10.4	0.24
02-11-2021 18:00	10.85	10.52	0.15
02-11-2021 19:00	10.85	10.55	0.13
02-11-2021 20:00	10.88	10.5	0.19
02-11-2021 21:00	10.83	11.32	0.21

02-11-2021 22:00	10.88	11.33	0.22
02-11-2021 23:00	10.94	11.2	0.23
03-11-2021 00:00	10.98	11.27	0.2
03-11-2021 01:00	10.93	11.24	0.16
03-11-2021 02:00	10.98	12.14	0.24
03-11-2021 03:00	10.97	12.39	0.16
03-11-2021 04:00	10.94	12.22	0.12
03-11-2021 05:00	10.99	12.11	0.21
03-11-2021 06:00	10.97	12.13	0.2
03-11-2021 07:00	10.96	12.13	0.21
03-11-2021 08:00	10.96	12.21	0.12
03-11-2021 09:00	10.93	12.12	0.21
03-11-2021 10:00	10.87	12.37	0.2
03-11-2021 11:00	10.98	13.07	0.14
03-11-2021 12:00	11.05	13.17	0.15
03-11-2021 13:00	11.02	13.17	0.16
03-11-2021 14:00	11.03	13.28	0.22
03-11-2021 15:00	11.25	10.36	0.17
03-11-2021 16:00	11.34	10.33	0.18
03-11-2021 17:00	11.73	10.46	0.24
03-11-2021 18:00	11.65	10.58	0.14
03-11-2021 19:00	11.67	10.69	0.16
03-11-2021 20:00	11.65	10.78	0.13
03-11-2021 21:00	11.61	10.89	0.09
03-11-2021 22:00	11.65	10.84	0.15
03-11-2021 23:00	11.68	11.07	0.19
04-11-2021 00:00	11.74	11.13	0.1
04-11-2021 01:00	11.76	11.11	0.11
04-11-2021 02:00	11.78	11.12	0.14
04-11-2021 03:00	11.76	11.13	0.26
04-11-2021 04:00	11.8	11.11	0.13
04-11-2021 05:00	11.81	11.38	0.07
04-11-2021 06:00	11.79	11.43	0.12
04-11-2021 07:00	11.79	11.58	0.28
04-11-2021 08:00	11.76	12.11	0.11
04-11-2021 09:00	11.78	12.12	0.13
04-11-2021 10:00	11.76	12.11	0.17
04-11-2021 11:00	11.77	12.25	0.16
04-11-2021 12:00	11.77	12.37	0.1
04-11-2021 13:00	11.71	12.42	0.11
04-11-2021 14:00	11.78	12.54	0.23
04-11-2021 15:00	11.74	12.55	0.02
04-11-2021 16:00	11.76	12.76	0.15
04-11-2021 17:00	11.68	12.93	0.1
04-11-2021 18:00	11.82	13.04	0.12
04-11-2021 19:00	12.29	13.27	0.11
04-11-2021 20:00	12.37	13.36	0.18
04-11-2021 21:00	12.37	13.44	0.14

04-11-2021 22:00	12.33	13.48	0.14
04-11-2021 23:00	12.38	13.55	0.16
05-11-2021 00:00	12.74	13.44	0.02
05-11-2021 01:00	12.9	13.25	0.09
05-11-2021 02:00	12.89	13.46	0.09
05-11-2021 03:00	12.92	13.37	0.18
05-11-2021 04:00	12.75	13.39	0.05
05-11-2021 05:00	12.72	13.59	0.09
05-11-2021 06:00	12.75	13.53	0.05
05-11-2021 07:00	12.71	13.52	0.19
05-11-2021 08:00	12.7	13.5	0.11
05-11-2021 09:00	12.73	13.61	0.14
05-11-2021 10:00	12.77	10.4	0.23
05-11-2021 11:00	12.75	10.45	0.18
05-11-2021 12:00	12.76	10.37	0.21
05-11-2021 13:00	12.78	10.27	0.07
05-11-2021 14:00	12.79	10.32	0.24
05-11-2021 15:00	12.82	10.41	0
05-11-2021 16:00	12.77	10.57	0.11
05-11-2021 17:00	12.73	10.69	0.15
05-11-2021 18:00	12.85	11.07	0.23
05-11-2021 19:00	12.71	11.24	0.01
05-11-2021 20:00	12.68	11.32	0.07
05-11-2021 21:00	12.74	11.39	0.16
05-11-2021 22:00	12.75	11.42	0.05
05-11-2021 23:00	12.76	11.41	0.06
06-11-2021 00:00	12.96	11.66	0.15
06-11-2021 01:00	12.94	11.73	0.13
06-11-2021 02:00	12.79	11.88	0.17
06-11-2021 03:00	12.88	11.9	0.05
06-11-2021 04:00	12.91	12.08	0.06
06-11-2021 05:00	12.82	12.13	0.07
06-11-2021 06:00	13.11	12.23	0.11
06-11-2021 07:00	13.33	12.37	0.09
06-11-2021 08:00	13.46	12.48	0.05
06-11-2021 09:00	13.56	12.52	0.08
06-11-2021 10:00	13.76	12.78	0.1
06-11-2021 11:00	13.8	12.81	0.1
06-11-2021 12:00	13.79	12.89	0.2
06-11-2021 13:00	13.77	12.74	0.08
06-11-2021 14:00	13.82	12.78	0.12
06-11-2021 15:00	13.78	12.73	0.03
06-11-2021 16:00	13.76	12.84	0.11
06-11-2021 17:00	13.72	12.88	0.19
06-11-2021 18:00	13.72	12.68	0.02
06-11-2021 19:00	13.76	12.78	0.16
06-11-2021 20:00	13.77	12.69	0
06-11-2021 21:00	13.75	12.81	0.07

06-11-2021 22:00	13.75	12.92	0.11
06-11-2021 23:00	13.75	12.81	0.07
07-11-2021 00:00	13.78	12.87	0.08
07-11-2021 01:00	13.82	12.86	0.01
07-11-2021 02:00	13.88	12.76	0.03
07-11-2021 03:00	13.9	12.73	0.09
07-11-2021 04:00	13.91	12.99	0.08
07-11-2021 05:00	13.97	12.93	0.06
07-11-2021 06:00	13.96	12.97	0.13
07-11-2021 07:00	13.94	12.97	0.14
07-11-2021 08:00	13.9	12.8	0.06
07-11-2021 09:00	13.85	12.78	0.03
07-11-2021 10:00	13.82	12.87	0.12
07-11-2021 11:00	13.81	13.01	0.07
07-11-2021 12:00	13.77	13.27	0.05
07-11-2021 13:00	13.76	13.38	0.06
07-11-2021 14:00	13.77	13.44	0.08
07-11-2021 15:00	13.79	13.48	0
07-11-2021 16:00	13.75	10.16	0.02
07-11-2021 17:00	13.72	10.24	0.09
07-11-2021 18:00	13.74	10.29	0.03
07-11-2021 19:00	13.73	10.36	0.05
07-11-2021 20:00	13.74	10.44	0.13
07-11-2021 21:00	13.76	10.51	0.03
07-11-2021 22:00	13.74	10.56	0.08
07-11-2021 23:00	13.78	10.77	0.12

Date&Time (YYYY-MM-DD hh:mm:ss)	SCRUBBER 1 (pH)	SCRUBBER 2 (pH)	VOC (PPM)
08-11-2021 01:00	12.83	11.84	0.05
08-11-2021 02:00	12.78	11.94	0.15
08-11-2021 03:00	12.78	11.84	0.05
08-11-2021 04:00	12.82	11.87	0.12
08-11-2021 05:00	12.92	11.91	0.08
08-11-2021 06:00	12.86	11.91	0.04
08-11-2021 07:00	12.92	11.92	0.06
08-11-2021 08:00	12.9	11.69	0.14
08-11-2021 09:00	12.86	11.69	0.18
08-11-2021 10:00	12.82	11.59	0.03
08-11-2021 11:00	12.81	11.6	0.14
08-11-2021 12:00	12.8	11.63	0.05
08-11-2021 13:00	12.75	11.89	0.08
08-11-2021 14:00	12.74	11.74	0.11
08-11-2021 15:00	12.74	11.78	0.03
08-11-2021 16:00	12.76	11.8	0.15
08-11-2021 17:00	12.75	11.78	0.1
08-11-2021 18:00	12.76	11.93	0.22
08-11-2021 19:00	12.81	11.7	0.1
08-11-2021 20:00	12.84	11.7	0.17
08-11-2021 21:00	12.86	11.62	0.18
08-11-2021 22:00	12.9	11.56	0.01
08-11-2021 23:00	12.95	11.43	0.16
09-11-2021 00:00	12.99	11.23	0.14
09-11-2021 01:00	13	11.41	0.14
09-11-2021 02:00	13.03	11.36	0.19
09-11-2021 03:00	13.05	10.12	0.09
09-11-2021 04:00	13.03	10.85	0.17
09-11-2021 05:00	13.04	10.66	0.14
09-11-2021 06:00	13.08	10.53	0.08
09-11-2021 07:00	13.09	11.15	0.14
09-11-2021 08:00	12.96	10.9	0.16
09-11-2021 09:00	12.83	10.89	0.09
09-11-2021 10:00	12.84	10.87	0.13
09-11-2021 11:00	12.75	11	0.09
09-11-2021 12:00	12.69	10.75	0.03
09-11-2021 13:00	12.71	10.87	0.08
09-11-2021 14:00	12.71	10.93	0.08
09-11-2021 15:00	12.66	11.01	0.11
09-11-2021 16:00	11.62	10.8	0.07
09-11-2021 17:00	11.15	11.07	0.12
09-11-2021 18:00	11.17	10.86	0.12
09-11-2021 19:00	11.67	11.07	0.03
09-11-2021 20:00	11.75	10.84	0
09-11-2021 21:00	11.68	11.06	0.04
09-11-2021 22:00	11.62	10.98	0.01

09-11-2021 23:00	11.69	10.93	0.03
10-11-2021 00:00	11.67	10.75	0.09
10-11-2021 01:00	11.81	10.71	0.1
10-11-2021 02:00	11.62	10.63	0.05
10-11-2021 03:00	11.67	10.7	0.23
10-11-2021 04:00	11.67	10.6	0
10-11-2021 05:00	11.93	10.43	0.02
10-11-2021 06:00	12.12	10.43	0.06
10-11-2021 07:00	11.79	10.56	0.02
10-11-2021 08:00	11.23	10.6	0.08
10-11-2021 09:00	11.12	10.19	0.14
10-11-2021 10:00	11.06	10.29	0.1
10-11-2021 11:00	10.86	10.54	0.01
10-11-2021 12:00	10.78	10.4	0.02
10-11-2021 13:00	10.57	10.26	0.11
10-11-2021 14:00	10.31	10.48	0.02
10-11-2021 15:00	10.23	10.43	0.15
10-11-2021 16:00	10.23	10.2	0.13
10-11-2021 17:00	10.3	10.2	0.05
10-11-2021 18:00	10.37	10.14	0.06
10-11-2021 19:00	10.42	10.01	0.17
10-11-2021 20:00	10.41	10.17	0.1
10-11-2021 21:00	10.55	10.02	0.1
10-11-2021 22:00	10.65	10.01	0.14
10-11-2021 23:00	10.67	10.09	0.08
11-11-2021 00:00	10.66	10.18	0.04
11-11-2021 01:00	10.69	10.11	0.13
11-11-2021 02:00	10.7	10.16	0.14
11-11-2021 03:00	10.65	10.07	0.08
11-11-2021 04:00	10.65	10.26	0.13
11-11-2021 05:00	10.86	10.77	0.07
11-11-2021 06:00	11.09	10.9	0.15
11-11-2021 07:00	11.22	10.66	0.14
11-11-2021 08:00	10.91	10.72	0.04
11-11-2021 09:00	10.84	10.87	0.19
11-11-2021 10:00	10.71	10.7	0.06
11-11-2021 11:00	10.58	10.87	0.07
11-11-2021 12:00	10.57	10.61	0.07
11-11-2021 13:00	10.62	10.23	0.08
11-11-2021 14:00	10.55	10.67	0.08
11-11-2021 15:00	10.54	10.79	0.01
11-11-2021 16:00	10.5	10.27	0.06
11-11-2021 17:00	11.01	10.52	0.07
11-11-2021 18:00	11.2	10.69	0.05
11-11-2021 19:00	11.01	10.75	0.09
11-11-2021 20:00	10.69	10.89	0.13
11-11-2021 21:00	10.57	10.94	0.16
11-11-2021 22:00	10.6	11.07	0.08

11-11-2021 23:00	10.53	11.16	0.24
12-11-2021 00:00	10.54	11.26	0.11
12-11-2021 01:00	10.57	11.29	0.03
12-11-2021 02:00	10.48	11.33	0.09
12-11-2021 03:00	10.49	11.46	0.07
12-11-2021 04:00	10.42	11.53	0.06
12-11-2021 05:00	10.56	11.73	0.07
12-11-2021 06:00	10.51	11.94	0.01
12-11-2021 07:00	10.81	12.35	0.06
12-11-2021 08:00	10.77	12.34	0.03
12-11-2021 09:00	10.88	12.27	0
12-11-2021 10:00	10.6	12.28	0.08
12-11-2021 11:00	10.5	12.35	0.03
12-11-2021 12:00	10.4	12.38	0.07
12-11-2021 13:00	10.4	12.3	0
12-11-2021 14:00	10.35	12.43	0.04
12-11-2021 15:00	10.32	12.24	0.08
12-11-2021 16:00	10.29	12.18	0.02
12-11-2021 17:00	10.37	12.39	0.11
12-11-2021 18:00	10.34	12.79	0.03
12-11-2021 19:00	10.35	12.84	0.12
12-11-2021 20:00	10.39	13.09	0.02
12-11-2021 21:00	10.51	13.06	0.02
12-11-2021 22:00	10.77	13.03	0.03
12-11-2021 23:00	10.91	13.15	0.12
13-11-2021 00:00	10.98	13.18	0.14
13-11-2021 01:00	10.99	13.13	0.02
13-11-2021 02:00	10.86	13.08	0.04
13-11-2021 03:00	11.24	13.19	0.15
13-11-2021 04:00	11.35	13.33	0.08
13-11-2021 05:00	11.51	13.41	0.01
13-11-2021 06:00	11.48	13.47	0.12
13-11-2021 07:00	11.48	13.57	0.16
13-11-2021 08:00	11.18	13.82	0
13-11-2021 09:00	10.5	13.89	0.04
13-11-2021 10:00	10.2	11.22	0.07
13-11-2021 11:00	10.28	11.33	0.27
13-11-2021 12:00	10.23	11.38	0.04
13-11-2021 13:00	10.17	11.12	0.08
13-11-2021 14:00	10.31	11.14	0.1
13-11-2021 15:00	10.16	11.17	0.07
13-11-2021 16:00	10.06	11.2	0.05
13-11-2021 17:00	10.06	11.28	0.07
13-11-2021 18:00	10.3	11.39	0.13
13-11-2021 19:00	10.29	11.18	0.07
13-11-2021 20:00	10.3	11.33	0.05
13-11-2021 21:00	10.36	11.29	0.07
13-11-2021 22:00	10.43	11.2	0.11

M/S SUFLON DRUGS RACHANAPALLI

13-11-2021 23:00	10.51	11.34	0.01
14-11-2021 00:00	10.6	11.66	0.09
14-11-2021 01:00	10.57	11.74	0.03
14-11-2021 02:00	10.61	11.79	0.05
14-11-2021 03:00	10.6	12.05	0.04
14-11-2021 04:00	10.62	12.26	0.12
14-11-2021 05:00	10.6	12.27	0.1
14-11-2021 06:00	10.45	12.34	0.02
14-11-2021 07:00	10.25	12.47	0.05
14-11-2021 08:00	10.15	12.59	0.05
14-11-2021 09:00	10.14	12.57	0.04
14-11-2021 10:00	10.12	12.61	0.03
14-11-2021 11:00	10.12	12.66	0.14
14-11-2021 12:00	10.18	12.76	0.06
14-11-2021 13:00	10.21	12.72	0.16
14-11-2021 14:00	10.18	12.81	0.07
14-11-2021 15:00	10.14	12.81	0.02
14-11-2021 16:00	10.15	12.97	0.03
14-11-2021 17:00	10.16	12.92	0.13
14-11-2021 18:00	10.25	12.97	0
14-11-2021 19:00	10.33	12.97	0.07
14-11-2021 20:00	10.39	12.81	0.04
14-11-2021 21:00	10.32	12.84	0.02
14-11-2021 22:00	10.33	12.86	0.11
14-11-2021 23:00	11.33	12.89	0.13
15-11-2021 00:00	11.37	12.84	0.06
15-11-2021 01:00	11.3	12.83	0
15-11-2021 02:00	11.28	12.85	0.03
15-11-2021 03:00	11.31	12.93	0.13
15-11-2021 04:00	11.29	12.93	0.04
15-11-2021 05:00	11.24	12.87	0.13
15-11-2021 06:00	11.37	12.79	0.24
15-11-2021 07:00	11.42	12.64	0.08
15-11-2021 08:00	11.34	12.62	0.05
15-11-2021 09:00	11.28	12.67	0.12
15-11-2021 10:00	11.23	12.73	0.2
15-11-2021 11:00	11.18	12.76	0.17
15-11-2021 12:00	11.08	12.8	0.11
15-11-2021 13:00	11.27	12.95	0.18
15-11-2021 14:00	11.18	10.11	0.13
15-11-2021 15:00	11.18	10.19	0.17
15-11-2021 16:00	11.15	10.25	0.19
15-11-2021 17:00	11.17	10.27	0
15-11-2021 18:00	11.13	10.28	0.08
15-11-2021 19:00	11.24	10.32	0.04
15-11-2021 20:00	11.26	10.33	0.15
15-11-2021 21:00	11.31	10.49	0.2
15-11-2021 22:00	11.39	10.58	0.07

15-11-2021 23:00	11.33	10.78	0.03
16-11-2021 00:00	11.41	10.87	0.03
16-11-2021 01:00	11.41	10.99	0.13
16-11-2021 02:00	11.2	10.84	0.16
16-11-2021 03:00	11.27	11.1	0.11
16-11-2021 04:00	11.23	11.1	0.11
16-11-2021 05:00	11.32	11.25	0.03
16-11-2021 06:00	11.6	11.23	0.03
16-11-2021 07:00	11.45	11.25	0.01
16-11-2021 08:00	11.44	11.28	0.14
16-11-2021 09:00	11.63	11.31	0.02
16-11-2021 10:00	11.83	11.42	0.1
16-11-2021 11:00	11.94	11.51	0.15
16-11-2021 12:00	11.39	11.72	0.14
16-11-2021 13:00	11.92	11.62	0.06
16-11-2021 14:00	12.47	11.65	0.06
16-11-2021 15:00	12.66	11.67	0.06
16-11-2021 16:00	12.81	11.64	0.05
16-11-2021 17:00	13.21	11.62	0.04
16-11-2021 18:00	13.24	12.32	0
16-11-2021 19:00	13.15	12.37	0.05
16-11-2021 20:00	13.18	12.54	0.05
16-11-2021 21:00	13.16	12.45	0.1
16-11-2021 22:00	13.14	12.29	0.13
16-11-2021 23:00	13.29	12.25	0.14
17-11-2021 00:00	13.28	12.47	0.15
17-11-2021 01:00	13.18	12.25	0.13
17-11-2021 02:00	13.07	12.2	0.16
17-11-2021 03:00	13.04	12.18	0.05
17-11-2021 04:00	13.06	12.37	0.19
17-11-2021 05:00	13.18	12.22	0.06
17-11-2021 06:00	13.12	12.11	0.09
17-11-2021 07:00	13.18	12.12	0.18
17-11-2021 08:00	13.13	12.14	0.14
17-11-2021 09:00	13.04	12.15	0.12
17-11-2021 10:00	13.03	12.1	0.19
17-11-2021 11:00	12.99	12.26	0.24
17-11-2021 12:00	13	12.13	0.36
17-11-2021 13:00	12.95	11.98	0.24
17-11-2021 14:00	12.99	11.94	0.18
17-11-2021 15:00	12.99	12.02	0.16
17-11-2021 16:00	12.97	11.94	0.05
17-11-2021 17:00	12.98	12.07	0.17
17-11-2021 18:00	12.95	11.9	0.19
17-11-2021 19:00	12.96	11.98	0.23
17-11-2021 20:00	12.98	11.9	0.32
17-11-2021 21:00	12.91	11.89	0.32
17-11-2021 22:00	12.92	11.86	0.26

17-11-2021 23:00	12.9	11.93	0.65
18-11-2021 00:00	12.97	11.85	0.75
18-11-2021 01:00	13	11.97	0.83
18-11-2021 02:00	13	11.82	0.95
18-11-2021 03:00	12.88	11.82	1.1
18-11-2021 04:00	12.88	11.88	1.12
18-11-2021 05:00	12.92	12.08	0.54
18-11-2021 06:00	12.93	11.93	0.52
18-11-2021 07:00	12.92	11.81	1.21
18-11-2021 08:00	12.94	11.86	1.86
18-11-2021 09:00	12.91	11.81	2.43
18-11-2021 10:00	13.08	11.91	2.47
18-11-2021 11:00	13.01	11.72	2.72
18-11-2021 12:00	12.9	11.93	2.37
18-11-2021 13:00	12.91	11.94	2.78
18-11-2021 14:00	12.85	11.97	2.56
18-11-2021 15:00	12.85	11.84	0.86
18-11-2021 16:00	12.83	11.95	1.72
18-11-2021 17:00	12.82	11.68	0.85
18-11-2021 18:00	12.85	11.9	0.93
18-11-2021 19:00	13.04	11.74	0.87
18-11-2021 20:00	13.05	11.91	0.87
18-11-2021 21:00	13.09	11.93	0.87
18-11-2021 22:00	13.1	11.75	0.91
18-11-2021 23:00	12.93	11.85	0.83
19-11-2021 00:00	12.91	11.72	0.71
19-11-2021 01:00	12.95	11.8	0.72
19-11-2021 02:00	12.9	11.74	0.8
19-11-2021 03:00	12.93	11.63	0.89
19-11-2021 04:00	12.9	11.66	0.79
19-11-2021 05:00	12.9	11.67	1.02
19-11-2021 06:00	12.87	11.76	1.73
19-11-2021 07:00	12.89	11.84	2.38
19-11-2021 08:00	12.88	11.68	2.29
19-11-2021 09:00	12.85	11.71	2.69
19-11-2021 10:00	12.86	11.9	1.09
19-11-2021 11:00	12.82	11.85	0.98
19-11-2021 12:00	12.77	11.78	1.09
19-11-2021 13:00	12.82	11.79	1.25
19-11-2021 14:00	12.68	11.72	1.24
19-11-2021 15:00	12.69	11.82	2.39
19-11-2021 16:00	12.7	11.53	2.64
19-11-2021 17:00	12.66	11.72	4.21
19-11-2021 18:00	12.65	11.7	4.41
19-11-2021 19:00	12.68	11.58	3.85
19-11-2021 20:00	12.64	11.79	3.4
19-11-2021 21:00	12.6	11.58	3.51
19-11-2021 22:00	12.83	11.8	1.1

19-11-2021 23:00	12.82	11.55	1.33
20-11-2021 01:00	12.79	11.76	1.23
20-11-2021 03:00	12.78	11.59	1.38
20-11-2021 05:00	12.73	11.58	1.15
20-11-2021 07:00	12.68	11.74	1.25
20-11-2021 09:00	12.53	11.71	1.07
20-11-2021 11:00	12.38	11.48	1.14
20-11-2021 13:00	12.31	11.67	0.91
20-11-2021 15:00	12.38	11.49	1.04
20-11-2021 17:00	12.35	11.4	0.91
20-11-2021 19:00	12.34	11.62	0.66
20-11-2021 21:00	12.74	11.41	0.62
20-11-2021 23:00	12.74	11.54	0.66
21-11-2021 01:00	12.55	11.46	0.62
21-11-2021 03:00	12.61	11.73	0.67
21-11-2021 05:00	12.56	11.48	0.71
21-11-2021 07:00	12.36	11.67	0.96
21-11-2021 09:00	12.38	11.67	0.98
21-11-2021 11:00	12.37	11.56	0.92
21-11-2021 13:00	12.38	11.63	0.94
21-11-2021 15:00	12.37	11.44	0.82
21-11-2021 17:00	12.37	11.56	0.95
21-11-2021 19:00	12.35	11.67	1
21-11-2021 21:00	12.3	11.55	0.88
21-11-2021 23:00	12.29	11.55	0.95
22-11-2021 01:00	12.26	11.41	1.03
22-11-2021 03:00	12.27	11.66	0.86
22-11-2021 05:00	12.26	11.63	0.96
22-11-2021 07:00	12.38	11.46	1.04
22-11-2021 09:00	12.45	11.58	1.07
22-11-2021 11:00	12.49	11.49	1.07
22-11-2021 13:00	11.75	11.37	0.55
22-11-2021 15:00	11.93	11.57	0.03
22-11-2021 17:00	11.91	11.22	0.3
22-11-2021 19:00	11.96	11.54	0.7
22-11-2021 21:00	12	11.5	0.69
22-11-2021 23:00	11.94	11.49	0.78
23-11-2021 01:00	11.97	11.48	0.79
23-11-2021 03:00	11.9	11.47	0.91
23-11-2021 05:00	11.92	11.48	0.94
23-11-2021 07:00	11.98	11.44	0.78
23-11-2021 09:00	12.01	11.47	0.94
23-11-2021 11:00	12.01	11.53	1.27
23-11-2021 13:00	12	11.54	0.87
23-11-2021 15:00	12.06	11.26	0.08
23-11-2021 17:00	11.98	11.29	0.08
23-11-2021 19:00	12.03	11.3	0.32
23-11-2021 21:00	12.03	11.36	0.97

23-11-2021 23:00	11.98	11.45	0.89
24-11-2021 01:00	11.99	11.59	1.05
24-11-2021 03:00	12.02	11.48	1
24-11-2021 05:00	12	11.57	0.95
24-11-2021 07:00	12.05	11.5	1.25
24-11-2021 09:00	12.01	11.31	1.19
24-11-2021 11:00	12.05	11.5	1.37
24-11-2021 13:00	12.03	11.43	1.04
24-11-2021 15:00	12.04	11.2	0.07
24-11-2021 17:00	12.04	11.19	0.34
24-11-2021 19:00	12.05	11.45	0.05
24-11-2021 21:00	12.06	11.37	0
24-11-2021 23:00	12.07	11.46	0
25-11-2021 01:00	12.01	11.56	0.05
25-11-2021 03:00	12.01	11.41	0.04
25-11-2021 05:00	12	11.33	0.05
25-11-2021 07:00	12.06	11.55	0.12
25-11-2021 09:00	12.04	11.27	0.18
25-11-2021 11:00	12.02	11.43	0.58
25-11-2021 13:00	12.08	11.43	0.59
25-11-2021 15:00	12.05	11.2	0.46
25-11-2021 17:00	11.25	11.31	0.68
25-11-2021 19:00	11.38	11.48	0.61
25-11-2021 21:00	11.43	11.27	0.63
25-11-2021 23:00	11.45	11.31	0.65
26-11-2021 01:00	11.47	11.39	0.61
26-11-2021 03:00	11.49	11.43	0.61
26-11-2021 05:00	11.52	11.36	0.38
26-11-2021 07:00	11.58	11.55	0.78
26-11-2021 09:00	11.58	11.33	0.73
26-11-2021 11:00	11.53	11.24	0.97
26-11-2021 13:00	11.46	11.37	1.07
26-11-2021 15:00	11.51	11.35	0.96
26-11-2021 17:00	11.49	11.27	1
26-11-2021 19:00	11.6	11.26	0.89
26-11-2021 21:00	11.59	11.45	1.31
26-11-2021 23:00	11.64	11.4	1.46
27-11-2021 01:00	11.66	11.48	1.37
27-11-2021 03:00	11.72	11.5	1.36
27-11-2021 05:00	11.75	11.36	0.5
27-11-2021 07:00	11.77	11.45	1.76
27-11-2021 09:00	11.72	11.32	1.63
27-11-2021 11:00	11.67	11.35	1.51
27-11-2021 13:00	11.62	11.2	1.39
27-11-2021 15:00	10.61	11.24	1.79
27-11-2021 17:00	10.71	11.3	1.98
27-11-2021 19:00	10.83	11.3	1.68
27-11-2021 21:00	10.89	11.51	2

27-11-2021 23:00	10.94	11.46	2.08
28-11-2021 01:00	10.99	11.52	2.15
28-11-2021 03:00	11.06	11.29	2
28-11-2021 05:00	11.06	11.44	2.11
28-11-2021 07:00	11.12	11.29	2.08
28-11-2021 09:00	11.15	11.46	2.19
28-11-2021 11:00	11.1	11.35	2.26
28-11-2021 13:00	11.15	11.4	2.23
28-11-2021 15:00	11.17	11.39	0.64
28-11-2021 17:00	11.17	11.47	0.69
28-11-2021 19:00	11.2	11.37	0.64
28-11-2021 21:00	11.2	11.23	0.26
28-11-2021 23:00	11.17	11.48	0.3
29-11-2021 01:00	11.17	11.23	0.23
29-11-2021 03:00	11.19	11.5	0.1
29-11-2021 05:00	11.21	11.49	0.52
29-11-2021 07:00	11.23	11.32	0.42
29-11-2021 09:00	11.17	11.38	0.42
29-11-2021 11:00	11.13	11.4	0.47
29-11-2021 13:00	11.13	11.29	2.32
29-11-2021 15:00	11.11	11.38	1.91
29-11-2021 17:00	11.15	11.38	1.25
29-11-2021 19:00	11.12	11.44	1.88
29-11-2021 21:00	11.21	11.49	1.98
29-11-2021 23:00	11.17	11.38	1.79
30-11-2021 00:00	11.2	11.48	1.78
30-11-2021 01:00	11.17	11.19	1.52
30-11-2021 02:00	11.22	11.18	1.2
30-11-2021 03:00	11.22	11.25	0.17
30-11-2021 04:00	11.24	11.23	0.66
30-11-2021 05:00	11.23	11.25	0.86
30-11-2021 06:00	11.25	11.45	0.61
30-11-2021 07:00	11.26	11.3	0.23
30-11-2021 08:00	11.22	11.27	0.56
30-11-2021 09:00	11.22	11.41	0.33
30-11-2021 10:00	11.17	11.31	0.72
30-11-2021 11:00	11.1	11.24	0.81
30-11-2021 12:00	11.11	11.25	1.76
30-11-2021 13:00	11.09	11.3	2.79
30-11-2021 14:00	11.09	11.3	2.59
30-11-2021 15:00	11.09	11.38	2.51
30-11-2021 16:00	11.13	11.23	2.97
30-11-2021 17:00	11.13	11.25	0
30-11-2021 18:00	11.15	11.33	1.05
30-11-2021 19:00	11.18	11.41	0.5
30-11-2021 20:00	11.18	11.31	0.66
30-11-2021 21:00	11.23	11.48	0.64
30-11-2021 22:00	11.22	11.43	0.77

30-11-2021 23:00	11.18	11.35	0.77

Live View

Refresh

ADC Values

CH #	Short Code	Value	Unit
CH-1	SCRUBBER 1	12.675436	pH
CH-2	SCRUBBER 2	10.039366	pH
CH-3	VOC	1.135563	PPM

ANNEXURE - 6

Compliance of the industry on the directions issued by the Board vide Order dated 18.05.2021

S.No.	Direction	Compliance
1	The industry shall take all the necessary steps to reduce the odour nuisance within one month	a) Provided double stage scrubbers in production Block- B& C with water as a scrubbing media for the stage -1 of scrubber and caustic lye as a scrubbing media for stage-2 of scrubber for the scrubbing the HCl& SO_2 emissions emanated from the production block. b) Provided 2 Nos.of single stage scrubbers in Production Block-C for scrubbing the nitro fumes emanated in Stage – I of Oxyclozanide and also for the vents of the all the reactors in the production Block – C. c) Provided Jacketed receivers for the scrubbers in Production Block – B & C to minimize the temperature of scrubbing solution. d) Provided Candle filter with granulated carbon absorption system for the vent of the scrubbers provided in both the production Blocks. e) Provided online pH meters for the scrubbers provided in Block - B & Block – C to monitor the scrubbing efficiency and also pH meters are provided with data logger system. f) Connected the vents of the solvent storage tanks to the 4 Nos.of condensers (of 6 Sq.Mtrs capacity) to reduce the solvent losses from the storage tanks. g) Provided primary condenser (with water circulation) and secondary condenser (with chilled brine circulation) for the solvent distillation columns. h) Provided candy filter with granular activated carbon adsorption system for the vents of the condenser provided for the two solvent distillation columns. i) Connected the condenser vent of mother liquor storage tanks (day tank) to the candy filter with granular carbon adsorption system. j) Provided 100 Liters of closed collection tank for collection of sampling solution for each of the two distillation columns. k) Covered the Equalizing tanks (for both high and low TDS effluents) and also aeration tanks of the biological ETP with powder coated sheets. l) Provided suction hood (with ID fan of capacity 5 HP) for HTDS & LTDS Equalizing tanks and connected to scrubber. The vent of the scrubber is provided with candy filter with granular carbon adsorption system. m) provided suction hood (with ID fan of capacity – 5 HP) for the aeration tanks of biological ETP. The industry has provided scrubber for the aeration tank and vent of the scrubber is provided with candy filter granulated carbon adsorption system. n) provided candy filter with granular carbon adsorption for the vent of ATFD scrubber outlet. o) Using Agitated Nutsche Filter cum Drivers (ANFD) i.e., 7 Nos in Block-C and 3 Nos in Block-B which are closed system thereby controlling the odour nuisance while separation

		of mother liquors in the production blocks. p) Stopped usage of chlorine in the premises by outsourcing the manufacture of 5- Chloro Salicylic Acid (an intermediate stage (Stage -1) of niclosamide).
2	The industry shall provide separate stacks for the 4 TPH and 3 TPH boilers as stipulated in the CFO order dt. 21.06.2018 within one month	The industry is not operating the 3 TPH boiler and alsodisconnected the duct from 3 TPH boiler to the common stack permanently on 01.06.2021.
3	The industry shall not manufacture new products and not exceeding the permitted quantity, other than those mentioned in CFO	The industry is manufacturing only consented products within the permitted capacity for the period from Aug, 2021 to Nov, 2021.
4	The industry shall dispose the Plastic liners, carboys and scrap waste only to the authorized recyclers	The industry is disposing the plastic liners, carboys and scrap waste regularly to M/s. Apex polymers, Visakhapatnam which is an authorized recycler. The photocopies of the invoices and gate passes are enclosed as **Annexure- 12.**
5	The industry shall operate the two stage scrubbers for scrubbing of process emissions at all emission sources. The industry shall maintain online pH meters to the scrubbers	The industry is operating two stage scrubbers for the scrubbing of process emissions from the Block –B & C. The industry has provided online pH meters for the scrubbers provided in Block - B & Block – C to monitor the scrubbing efficiency and these pH meters are provided with data logger system. During inspection, the pH of the scrubbing media for the Block- B is observed to be 12.67 and for the Block- C is 10.03.
6	There shall not be ay discharge of waste water outside the industry premises	There is no discharge of wastewater outside the industry premises.
7	The online monitoring system shall be calibrated periodically as per equipment supplier's manual/CPCB guidelines before starting the production	The industry has provided online effluent monitoring system for the outlet of RO for monitoring pH, BOD, COD and TSS. During inspection, it was observed the online effluent monitoring system is indicating pH – 7.9; COD – 180.95 mg/ltr; BOD – 27.08 mg/ltr (BOD Analyzer is under repair); TSS – 45.49 mg/ltr. The industry has calibrated the online monitoring system on 10.11.2021 and the next due date for calibration of the system is on 09.05.2021.

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY : KURNOOL
Shankar Shopping Complex, 1st Floor, Krishna Nagar Main Road, Kurnool

Accredited by NABL as per ISO/IEC: 17025:2017

TC-9940

FORMAT No.APPCB/ZL/KNL/FM/59

AMBIENT AIR QUALITY ANALYSIS REPORT

Sample Reg. No. : **Report No. KNL2112035 to 036**
Name and Address of the sampling site : **M/s. Siflon Drugs** Sy.No. 25/4, Rachanapalli (V), Ananthapuramu District
Sampling Location :
KNL2112035 : AAQ Monitoring conducted at D.G set shed (crosswind direction).
KNL2112036 : AAQ Monitoring conducted near MEE plant (downwind direction)
Purpose of sampling : Compliance verification by the special team
Sample collected by : SEE & JSO, Zonal Office, Kurnool.
Sampling Date : 07-12-2021 & 08-12-2021
Sample Submit date : 09-12-2021
Date of Issue of report : 10-12-2021

It is to certify that the above samples were analyzed from 09-12-2021 to 10-12-2021 and the analysis results are declared as follows:

Sl. No	Parameter	Units	SAMPLE CODES / Analysis Results		Test Method	National Ambient Air Quality Standards (24 Hrs)
			035	036		
1.	Particulate Matter (PM_{10})	$\mu g/m^3$	65.6	84.7	IS:5182 (Part-23) 2006 (Reaffirmed 2017)	100
2.	Sulphur Dioxide (SO_2)	$\mu g/m^3$	18.4	20.2	IS:5182 (Part-2) 2006 (Reaffirmed 2017)	80
3.	Nitrogen Dioxide (NO_2)	$\mu g/m^3$	22.2	26.4	IS:5182 (Part-6) 2006 (Reaffirmed 2017)	80

Remarks:

1. The report shall not be reproduced except in full without approval of the Laboratory.
2. Results are related to sample as received and tested.

Signed this: 10th day of December, 2021

Authorized Signatory

10/12/21

STATE BOARD ANALYST
(M. BUJJI BABU)
Jr. Scientific Officer / Quality Manager,
Zonal Laboratory, Kurnool.

- Copy submitted to the Environmental Engineer, Regional Office, Ananthapuramu for information.

++ END OF THE REPORT ++

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY : KURNOOL
Shankar Shopping Complex, 1st Floor, Krishna Nagar Main Road, Kurnool

Accredited by NABL as per ISO/IEC: 17025:2017

TC-9940

FORMAT No.APPCB/ZL/KNL/FM/59

AMBIENT AIR QUALITY ANALYSIS REPORT

Sample Reg. No. : **Report No. KNL2112037 to 040**
Name and Address of the sampling site : **Surroundings of M/s. Siflon Drugs** Sy.No. 25/4, Rachanapalli (V), Ananthapuramu District
Sampling Location :

KNL2112037 : AAQ Monitoring conducted on the terrace of Sri Tirupal Reddy house.
KNL2112038 : AAQ Monitoring conducted on the terrace of Grama Sachivalayam building of Rachanapalli village
KNL2112039 : AAQ Monitoring conducted on the terrace of Susheela Reddy B.Ed collage building.
KNL2112040 : AAQ Monitoring conducted on the terrace of CRIT building.

Purpose of sampling : Compliance verification by the special team
Sample collected by : SEE & JSO, Zonal Office, Kurnool.
Sampling Date : 07-12-2021 & 08-12-2021
Sample Submit date : 09-12-2021
Date of Issue of report : 10-12-2021

It is to certify that the above samples were analyzed from 09-12-2021 to 10-12-2021 and the analysis results are declared as follows:

Sl. No	Parameter	Units	SAMPLE CODES Analysis Results				Test Method	National Ambient Air Quality Standards (24 Hrs)
			037	038	039	040		
1.	Particulate Matter (PM_{10})	$\mu g/m^3$	71.8	66.4	62.6	56.4	IS:5182 (Part-23) 2006 (Reaffirmed 2017)	100
2.	Sulphur Dioxide (SO_2)	$\mu g/m^3$	10.6	11.8	12.4	8.4	IS:5182 (Part-2) 2006 (Reaffirmed 2017)	80
3.	Nitrogen Dioxide (NO_2)	$\mu g/m^3$	20.2	24.3	21.3	16.2	IS:5182 (Part-6) 2006 (Reaffirmed 2017)	80

Remarks:

1. The report shall not be reproduced except in full without approval of the Laboratory.
2. Results are related to sample as received and tested.

Signed this: 10th day of December, 2021

Authorized Signatory
M. Bujji Babu 10/12/21
STATE BOARD ANALYST
(M. BUJJI BABU)
Jr. Scientific Officer / Quality Manager,
Zonal Laboratory, Kurnool.

- Copy submitted to the Environmental Engineer, Regional Office, Ananthapuramu for information.

++ END OF THE REPORT ++

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY : KURNOOL
Shankar Shopping Complex, 1st Floor, Krishna Nagar Main Road, Kurnool

Accredited by NABL as per ISO/IEC: 17025:2017

TC-9940

FORMAT No. APPCB/ZL/KNL/FM/58

Form IV
REPORT BY THE STATE BOARD ANALYST
(See rule 14)

Report No. **KNL2112033 & 034**
Dated:10th day of December, 2021

I hereby certify that I, Sri M.Bujji Babu, State Board Analyst duly appointed under sub–section (3) of Section 26 of the Air (Prevention and Control of Pollution) Act, 1981, received on the day of 09/12/2021 (monitored on 08/12/2021) from The Senior Environmental Engineer, Zonal Office, Kurnool, a sample each of

KNL2112033 : *Stack attached to 4TPH Boiler*
KNL2112034 : *Stack attached to scrubber at production block-B*

of ***M/s. Siflon Drugs, Sy.No.25/4, Rachanapalli (V), Ananthapuramu (Rural), Ananthapuramu District*** for analysis. The samples were in a condition fit for analysis and are as reported below.

I further certify that the aforementioned samples were analyzed from 09/12/2021 to 10/12/2021 and declare the results of the analysis to be as follows:

SL. No	Parameter	Units	Sample Codes / Analysis Results		CFO emission standard	Test Method
			033	034		
1	Particulate matter	mg/Nm^3	75.6	6.6	115	IS: 11255 (Part I) 1985 (Reaffirmed 2014)
2	Sulphur Dioxide (SO_2)	mg/Nm^3	12.6	8.6	–	Barium per chlorate method
3	Hydrochloric acid (HCL)	mg/Nm^3	–	24.9	35	–

The condition of the seals, fastening and container on receipt was intact.

Remarks:

1. The report shall not be reproduced except in full without approval of the Laboratory.
2. Results are related to sample as received and tested.
3. During the monitoring Air Pollution Control Equipments are in working condition.

Signed this: 10th day of December, 2021.

Authorized Signatory

STATE BOARD ANALYST
(M. BUJJI BABU)
Jr. Scientific Officer / Quality Manager,
Zonal Laboratory, Kurnool.

- Copy submitted to the Environmental Engineer, Regional Office, Ananthapuramu for information.

++ END OF THE REPORT ++

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY : KURNOOL
Shankar Shopping Complex, 1st Floor, Krishna Nagar Main Road, Kurnool
Accredited by NABL as per ISO/IEC: 17025:2017
TC-9940

FORMAT No.APPCB/ZL/KNL/FM/59

MONITORING OF VOLATILE ORGANIC COMPOUNDS IN AMBIENT AIR

ANALYSIS REPORT

Sample Reg. No. : **Report No. KNL2112041 (V-01 to V-10)**

Name and address of the sampling site : In and around (outside) the premises of **M/s Siflon Drugs** Sy.No.25/4, Rachanapalli(V), Anantapur District.

Sampling location & code numbers :

KNL2112041:

In the Industrial Premise :

V - 01 : Near production block area of M/s Siflon Drugs, Rachanapalli(V)

V - 02 : Near scrubber area of M/s Siflon Drugs, Rachanapalli(V)

V - 03 : Near MEE area of M/s Siflon Drugs, Rachanapalli(V)

V - 04 : Near boiler area of M/s Siflon Drugs, Rachanapalli(V)

In the work zone area of Industrial Premise :

V - 05 : Near Production block- " C" of M/s Siflon Drugs, Rachanapalli (V)

V - 06 : Near Condenser vent of M/s Siflon Drugs, Rachanapalli (V)

Outside the Industry premise :

V - 07 : Near Sri Tirupal Reddy house, Kodimi (V) , Anantapur District

V - 08 : Near Grama Sachivalayam, Rachanapalli (V), Anantapur District

V - 09 : Near Chiranjeevi Reddy Information Technology, Rachanapalli(V)

V - 10 : Near Susheela Reddy B.Ed, College, Rachanapalli(V)

Purpose of sampling : Compliance verification

Sample collected by : Junior Scientific Officer, Zonal Laboratory, Kurnool

Sampling Date & Time : 07-12-2021 & 08-12-2021

Sample Submit date : 09-12-2021

Date of Issue of report : 10-12-2021

It is to certify that the above samples were recorded on 07-12- 2021 and 08-12-2021 by Handheld VOC PID Detector. Make: Ion science, Model: Tiger LT and declared the analysis results are as follows:

Table-01 : Values recorded in PPM during the time 10.20 AM to 04.45 PM and 22.10 Hrs. to 23.40 Hrs. on 07/12/2021:

Sl No	Sample code	Parameters (value in ppm)														
		Acetone			Methanol			Benzene			Chloro benzene			Toluene		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
	In the Industrial Premises:															
1.	V-01	1.1	2.3	**1.7**	2.1	4.4	**3.25**	0.1	0.2	**0.15**	0.1	0.1	**0.1**	0.4	0.8	**0.60**
2.	V-02	1.4	5.8	**3.6**	2.3	5.4	**3.85**	0.1	0.2	**0.15**	0.1	0.3	**0.2**	1.2	6.7	**3.95**
3.	V-03	0.6	0.8	**0.7**	0.7	1.3	**1.00**	0.1	0.2	**0.15**	0.1	0.2	**0.15**	0.4	0.8	**0.60**
4.	V-04	0.2	0.6	**0.4**	0.6	1.1	**0.85**	0.1	0.2	**0.15**	0.1	0.2	**0.15**	0.2	0.6	**0.40**
	In the work zone area of Industrial Premises:															
5.	V-05	36.6	69.4	**53.0**	66.4	96.4	**81.4**	2.3	4.8	**3.55**	10.5	16.2	**13.35**	26.6	42.4	**34.5**
6.	V-06	3.4	8.8	**6.1**	2.9	9.8	**6.35**	1.2	3.2	**2.20**	0.8	1.3	**1.05**	0.6	1.4	**1.0**

Outside the Industry premises:																
7.	V-07	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**
8.	V-08	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**
9.	V-09	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**
10.	V-10	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**	BDL	BDL	**BDL**

Table-02 : Values recorded in PPM during the time 09.30 AM to 03.45 PM on 08/12/2021:

Sl No	Sample code	Parameters (value in ppm)														
		Acetone			Methanol			Benzene			Chloro benzene			Toluene		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
	In the Industrial Premises:															
1.	V-01	1.2	2.4	**1.8**	2	4.8	**3.4**	0.1	0.2	**0.15**	0.1	0.1	**0.1**	0.6	1.2	**0.9**
2.	V-02	1.2	5.9	**3.55**	2.6	5.5	**4.05**	0.1	0.2	**0.15**	0.1	0.1	**0.1**	0.8	6.2	**3.5**
3.	V-03	0.4	0.8	**0.6**	0.6	1.6	**1.1**	0.1	0.1	**0.1**	0.1	0.2	**0.15**	0.3	0.6	**0.45**
4.	V-04	0.3	0.5	**0.4**	0.3	1.2	**0.75**	0.1	0.1	**0.1**	0.1	0.1	**0.1**	0.3	0.7	**0.5**
	In the work zone area of Industrial Premises:															
5.	V-05	38.9	74.5	**56.7**	77.2	100.2	**88.7**	4.2	4.8	**4.5**	8.9	12.6	**10.75**	22.3	44.1	**33.2**
6.	V-06	2.6	3.2	**2.9**	2.2	5.8	**4.0**	0.2	3.8	**2.0**	0.2	0.8	**0.5**	0.6	1.6	**1.1**
	Outside the Industry premises:															
7.	V-07	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8.	V-08	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9.	V-09	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.	V-10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Remarks:

1. Monitoring was conducted with Handheld VOC detector-PID Detector, Make: Ion science, Model: Tiger LT
2. During the monitoring, weather is clear and the Ambient Temperature is recorded as 28 ^{0}C at day time.
3. Weather conditions were clear and no predominant wind speed was observed.
4. Vehicular movement was observed during the monitoring on nearest road high way.
5. BDL: Below Detectable Limits.
6. The above parameters are not under the scope of NABL.
7. Results are related to sample as tested.
8. This report shall not reproduce except in full without the approval of the Laboratory.

Signed this: 10th day of December, 2021

Authorized Signatory

STATE BOARD ANALYST
(M. BUJJI BABU)
Jr. Scientific Officer / Quality Manager,
Zonal Laboratory, Kurnool.

- Copy to the Environmental Engineer, APPCB, Regional Office, Ananthapuramu for information.

++ END OF THE REPORT ++

सी.एस.आइ.आर - भारतीय रासायनिक प्रौद्योगिकी संस्थान
CSIR - Indian Institute of Chemical Technology
(वैज्ञानिक तथा औघोगिक अनुसंधान परिषद)
(Council of Scientific & Industrial Research)
(विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार / Ministry of Science & Technology, Govt. of India)
तारनाका Tarnaka, हैदराबाद Hyderabad - 500 007, तेलंगाना Telangana State, भारत India

Dr. A. Gangagni Rao, FIE (India), FRSC (London)
Chief Scientist and Professor in AcSIR
Chairperson, Human Resource Management Committee (HRMC)
Bioengineering and Environmental Sciences Group (BEES)
Department of Energy and Environmental Engineering (DEEE)

डॉ. ए. गंगाग्नि राव, एफआईई(भारत) एफआरएससी (लंडन)
मुखय्य वैज्ञानिक एवं प्रोफेसर, एसीएसआईआर
अध्यक्ष, मानव संसाधन प्रबंधन समिति (एचआरएमसी)
जैव अभियांत्रिकी एवं पर्यावरणीय विज्ञान (बीईईएस)
ऊर्जा एवं पर्यावरण अभियंत्रिकी विभाग (डीईईई)

12th November 2021

To,

The Joint Chief Environmental Engineer (FAC),

APPCB, Zonal Office, Kurnool.

Dear Sir,

Sub: APPCB – RO: ATP – Orders of the Hon'ble NGT dated 09.09.2021 in O.A. No. 114 of 2020 – Request of the APPCB to identify the sources of odour from M/s. Siflon Drugs and to suggest the state-of-art odour control systems required to be provided by the industry – Report – Submitted – Reg.

Ref: APPCB, Zonal Office, Kurnool Lr.No.ATP-50/PCB/ZO-KNL/2021-261, dated 18.10.2021.

* * * *

With reference to the above, I along with Dr. S. Venkata Mohan, Sr. Pr. Scientist Council of Scientific and Industrial Research (CSIR), Indian Institute of Chemical Technology (IICT), Hyderabad, and Prof. S.V. Satyanarayana, Professor, Department of Chemical Engineering Jawaharlal Nehru Technological University, Anantapuramu College of Engineering Ananthapuramu visited M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District on 09.11.2021 to identify the sources of odour from and to suggest the state-of-art odour control systems required to be provided by the industry. A copy of the detailed report is herewith enclosed for kind perusal.

(Dr. A. Gangagni Rao)

Chief Scientist, CSIR - IICT, Hyderabad

REPORT OF THE EXPERTS OF INDIAN INSTITUTE OF CHEMICAL TECHNOLOGY, HYDERABAD AND JNTUA COLLEGE OF ENGINEERING, ANANTHAPURAMU TO M/s. SIFLON DRUGS, RACHANAPALLI (V), ANANTHAPURAMU ON 09.11.2021 FOR IDENTIFYING THE SOURCES OF ODOUR AND ALSO TO SUGGEST THE STATE OF ART ODOUR CONTROL SYSTEMS AS PER THE PROPOSAL OF APPCB DATED 18.10.2021 IN CONNECTION WITH THE DIRECTIONS OF HON'BLE NGT (PRINCIPAL BENCH), NEW DELHI VIDE ORDER DATED 09.09.2021 IN O.A. No. 114 OF 2020.

In the matter of Original Application No.114 of 2020 filed by Secretary, St. Mark Educational Institution, Society Group of Institution, Ananthapuramu regarding violations of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District, the Hon'ble NGT has passed an order dated September 09, 2021 directed that "*The state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health*". The A.P. Pollution Control Board vide letter dated October 18, 2021 requested the Indian Institute of Chemical Technology, Hyderabad and also Department of Chemical Engineering, Jawaharlal Nehru Technological University (JNTU), Anantapuramu to identify the sources odour and also to suggest state-of-art odour control system required to be provided by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District. A Copy of the Hon'ble NGT Order and APPCB request letter dated 18.10.2021 is attached as **Annexure – I & II.**

In connection with the request of the APPCB vide letter dated 18.10.2021, the following officials Indian Institute of Chemical Technology, Hyderabad and Department of Chemical Engineering, Jawaharlal Nehru Technological University (JNTU), Anantapur College of Engineering, Ananthapuramu visited M/s. Sflon Drugs, Rachanapalli (V), Ananthapuramu District and surrounding area on November 09, 2021 to identify the sources of odour from the industry and also to suggest measures for odour control from the industry.

Indian Institute of Chemical Technology (IICT), Hyderabad	**Jawaharlal Nehru Technological University (JNTU), Anantapuramu**
1. Dr. A. Gangagni Rao Chief Scientist Council of Scientific and Industrial Research (CSIR) Indian Institute of Chemical Technology (IICT), Hyderabad	2. Prof. S.V. Satyanarayana Professor Department of Chemical Engineering Jawaharlal Nehru Technological University, Anantapur College of Engineering, Ananthapuramu

3. Dr. S. Venkata Mohan Sr. Pr. Scientist Council of Scientific and Industrial Research (CSIR) Indian Institute of Chemical Technology (IICT), Hyderabad	

During the visit, it was observed that there is no odour while entering the plant site. The team had a detailed discussion with EE, APPCB, Regional Office, Ananthapuramu and also with Sri. S. Suresh Kumar, General Manager of the industry regarding products manufactured, raw materials used, details of the reactions carried out, material and water balance for each of the product, facilities available in the industry including the solvent distillation columns and effluent treatment plants, control systems provided by the industry for odour control from process, solvent distillation columns and Effluent Treatment Plant (ETP). The team noted that the M/s. Siflon Drugs, is manufacturing only 4 Nos.of products out of the 9 Nos.of permitted products and is manufacturing i) Oxyclozanide, ii) Niclosamide, iii) Fenbendazole and iv) Refoxanide. The committee was also noted that they have procuring the raw material for stage – 3 of Oxyclozanide (3, 5, 6 Trichloro Salicylic Acid) and also stage – 1 of Niclosamide (5 Chloro Salicylic Acid) in order to avoid usage of chlorine in the premises. The committee has thorough inspection of production blocks (B & C), Pharma block (D), raw material warehouse, distillation columns, solvent storage tanks, ETP provided for the low TDS effluents, stripper, MEE and ATFD provided for high TDS effluents.

The following are the identified sources of odour from the industry by the team and details are as follows:

A) Raw Material Warehouse:

The team inspected the Raw Material Warehouse facility provided for the storage of various chemicals used in the process. The pungent odour was observed from the raw material bags stored in the Raw Material Warehouse. The committee checked each and every raw material stored in the Raw Material Warehouse and noted that the pungent odour was due to storage of sulphur bags in the warehouse. The team suggested the unit representative to segregate the Sulphur powder bags and to store them in a closed room or enclosure with proper exhaust arrangement connected to scrubbing system in order to control the odour from the warehouse.

B) Production Block B, C & Pharma Block D:

The team noted that the unit is having 2 Nos. of production blocks (B & C) and 1 No. of Pharma block. The production block B is having 8 Nos. of reactors with a total capacity of 33 KL and is used for production of Fenbendazole and Rafoxanide products. The production block C is having 18 Nos. of reactors with a total capacity of 100 KL and is used for the production of Oxyclozanide and Niclosamide. From the process, in the stage – 3 of Oxyclozamide about 278 Kgs per batch of HCL and 420 Kgs per batch of SO_2 emissions are emanated (batch size 900 Kgs) and HCL of 36.5 Kgs per batch is emanated in stage-3 of Rafoxanide (batch size 500 Kgs) and also 73 Kgs per batch of HCL is emanated in Niclosamide (batch size 700 Kgs).

In order to control the odour from the process emissions, two stage scrubbing system (Water followed by Caustic Solution as Scrubbing media) is arranged to scrub the process emissions in each of the production blocks, Block-B and Block-C. Also, to increase the efficiency of the Scrubbers, the receivers used for the scrubbing media is arranged with jacketed facility with cooling water circulation through the jacket. The online pH monitoring mechanism with data logging system and alarm system is also provided to monitor the scrubbers provided in the production blocks.

In order to further strengthen the scrubbing system provided in the production blocks, the following additional measures may be considered for improving the efficiency of the scrubbing systems:

1. All the flange joints should be frequently checked for leakages in the gaskets and shall be replaced accordingly.

2. Wherever, metal pipes are connected with HDPE tubing, it should be ensured to provide appropriate clamps.

3. The industry shall provide common adsorption column for the scrubbers provided in production block – B & C and the vents from the two scrubbers (water and caustic) shall be connected to the common adsorption column system. Granular activated carbon specific to gaseous adsorption should be considered to increase the efficiency of the scrubbing.

C) Solvent Distillation Columns:

Two distillation columns used by the industry to recover Acetone and Methanol solvents which are used in the processes. The distillation columns are equipped with primary condensers having cooling water circulation, secondary condensers with chilled brine circulation. The vents of the secondary condensers are connected to the tertiary condensers with cooling water circulation. The team have thorough inspection of the columns and the following measures were suggested to increase the efficiency of the recovery systems, and to control the odour from the distillation columns :

a) The industry has provided the tertiary condenser and activated carbon column in order to reduce solvent loses from the distillation system,. During inspection the team observed that the vent from the third condenser is connected inappropriately bypassing the adsorption column. Therefore, it is suggested to provide the proper connections so that there will not be any bypassing of emissions from the tertiary condenser before venting into atmosphere.

b) The vent from the mother liquor storage tank (day tank) should also be connected to the adsorption column. The industry shall use the granular activated carbon instead of powder activated carbon to increase the efficiency of the adsorption.

c) Before distillation the solutions for recovery of solvent, the columns are operated under the reflux and after achieving the desired concentration, the column is operated. For this solution is being collected in an open container and transferred manually to the mother liquor storage tank. In order to avoid emissions, solutions should be collected in a closed container and transferred to the ML storage tank by gravity in a closed loop.

d) Proper railing should be provided in all stairs of distillation facility in order to avoid any accidents.

D) <u>Solvent Storage Facility (SSF)</u>

The industry is having 4 Nos. of Solvent Storage Tanks of capacity 20 KL each for the storage of Acetone, Methanol, Toluene and Monochloro Benzene which are used in the

process. The vents of all the solvent storage tanks are connected to the individual condensers of 6 m^2 capacity with cooling water circulation for each of the storage tanks and routed the collected solvent to the subsequent day storage tanks.

The team observed the odour of solvents near the Solvent Storage Facility even though proper precautions were taken by providing the condenser from the vent with circulation of cooling tower water. The odour may be due to acetone and methanol which are of low boiling substances. It is felt by the team the cold-water temperature may not be sufficient to condense the vapours of acetone and methanol. Therefore, it is suggested to use cold water by adding ice blocks in the Cooling tower and also to observe the inlet and outlet temperature by providing the thermometer.

Effluent Treatment Plant (ETP)

The team observed that the industry is segregating the wastewater into high and low TDS streams based on the TDS level of 10,000 mg/ltrs. The unit is treating the LTDS effluents in Biological ETP of capacity 30 KLD consisting of effluent collection tank, neutralization tank, lamella clarifier, aeration tank 3 Nos, tube settler, sand & carbon filters followed by 3 stage RO system of capacity 24 KLD. The permeate from the RO system is re-used in utilities (Boiler feed / Cooling tower makeup). The HTDS effluents are being disposed through stripper followed by MEE of 1.5 KL/hr and ATFD of capacity 150 Kgs/hr. To control the odour from the equalizing tanks, the tanks are covered with sheets and ducting system is connected to scrubber. Also, the vent of the ATFD is connected to the scrubbing system with Caustic solution as the scrubbing media to control odour from ATFD. The following additional measures are suggested to further reduce the odour from the effluent disposal system:

a) There is a possibility of vapour emission into atmosphere from the vent of the scrubber and in order to avoid this, it is suggested that the scrubber outlet should be passed through appropriately designed activated carbon adsorption system.

b) Equalizing tanks (for both high and low TDS effluents) and biological treatment systems (aeration tanks) are covered with sheets and there may be possibility of escaping of emissions during the functional operations of the systems. Therefore, it is recommended to cover Equalizing tanks (for both high and low TDS effluents)

and biological treatment systems (aeration tanks) completely and the vents of the tanks shall be connected to scrubbing system.

E) General Recommendations:

a) Presently industry is having VOC measurement at a fixed location. However, it is recommended to procure portable multi gas analyzer (VOC, H_2S, NH_3, etc.) for regular monitoring of odour causing gases at different locations more frequently and it should be recorded.

b) Solvent recovery should be ensured to the tune of 95% in the plant.

c) Industry is using water jet pump for the creation of suction in both the production blocks which may cause odour. It is suggested to monitor the water purity at the end of operations, once, to ensure that no solvent vapors are escaping through the water jet pump.

After detailed review of the industry as explained above, the following additional state-of-art odour control system are suggested by the team to further control odour from the industry:

1. Shall provide common adsorption column for the scrubbers provided in production block – B & C and the vents from the two scrubbers (water and caustic) shall be connected to the common adsorption column system with granular activated carbon specific to gaseous adsorption.

2. Shall provide proper connections without bypassing of adsorption column provided for the vent of the teriatory condenser provided for the solvent distillation column.

3. Shall connect the vent of the mother liquor storage tank (day tank) to the adsorption column and shall use the granulated activated carbon in the adsorption column to increase the efficiency of the adsorption.

4. The sampling solutions from the solvent distillation columns should be collected in a closed container and shall be transferred to the ML storage tank by gravity in a closed loop.

5. Shall provide proper railing in all stairs of distillation facility in order to avoid any accidents.

6. Shall use cold water by adding ice blocks in the Cooling tower provided for the vent condenser of solvent storage tanks and also to observe the inlet and outlet temperature by providing the thermometer.

7. Shall pass the vent of the scrubber provided for the ATFD outlet through appropriately designed activated carbon adsorption system.

8. Shall completely cover the Equalizing tanks (for both high and low TDS effluents) and biological treatment systems (aeration tanks) with powder coated sheets and the vents of the tanks shall be connected to scrubbing system.

9. Shall segregate the Sulphur powder bags in raw material warehouse and to store them in a separate closed room or enclosure with proper exhaust arrangement connected to scrubbing system.

10. Shall frequently check for leakages in gaskets of all the flange joints and replace accordingly.

11. Shall provide appropriate clamps to the metal pipes connected with HDPE tubing for avoiding leakages.

Dr. S. Venkata Mohan
Sr. Pr. Scientist
Council of Scientific and Industrial Research (CSIR)
Indian Institute of Chemical Technology (IICT), Hyderabad

Prof. S.V. Satyanarayana,
Department of Chemical Engineering
Jawaharlal Nehru Technological University, Anantapur College of Engineering, Anantapuramu

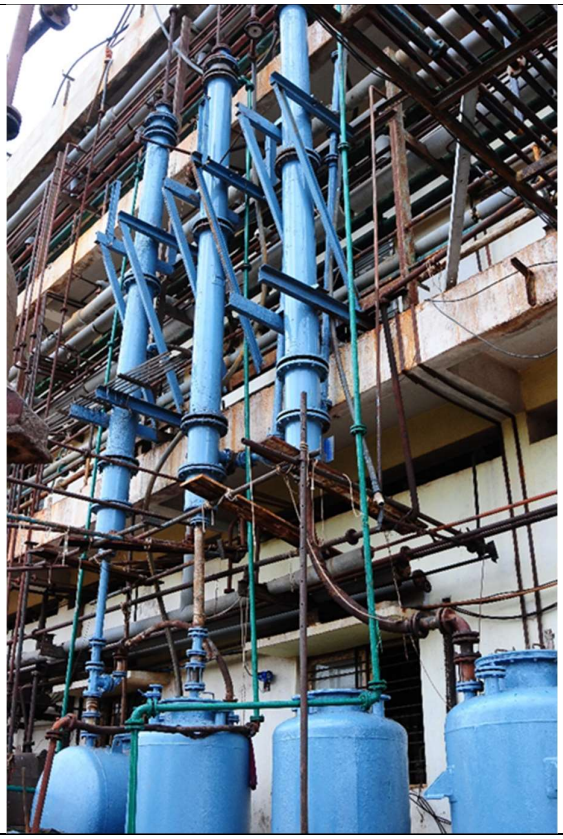
Dr. A. Gangagni Rao
Chief Scientist
Council of Scientific and Industrial Research (CSIR)
Indian Institute of Chemical Technology (IICT), Hyderabad

Photographs of M/S. Siflon Drugs, Rachanapalli (V), Ananthapuramu District taken during inspection.

Visit of the experts from IICT, Hyderabad and JNTU, Ananthapuramu to M/s. Siflon Drugs.

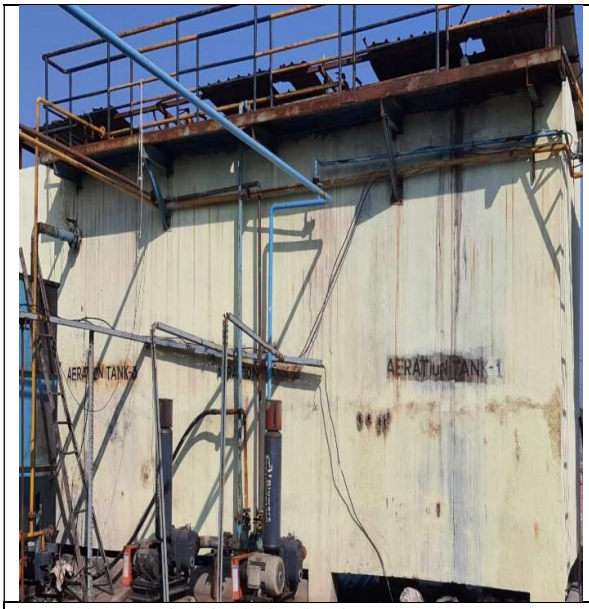
Solvent Storage Tanks provided with vent condensers

Distillation columns with primary, secundary, teritary condesers with Carbon adsoption column for the vent of the teritary condenser



Double Stage Scrubber provided in production Block- C

Double Stage Scrubber provided in production Block- B

	
Aeration tank of Biological ETP open to atmosphere	Stripper, MEE Plant and ATFD with scrubber provided for the vent of the ATFD

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL OFFICE: KURNOOL
1st Floor, Shankar Shopping Complex, Krishna Nagar Main Road, Kurnool – 518 002.

Phone: 08518-233619
Email: zoknl-jcee@appcb.gov.in

Lr.No. ATP-50/PCB/ZO-KNL/2021 – 261 **Date:** 18 **-10-2021**

To
The Director,
Indian Institute of Chemical Technology (IICT),
Uppal Rd, IICT Colony, Tarnaka, Hyderabad, Telangana – 500007
E-mail: director@iict.res.in.
Phone No. +91-40-27193482

Sir,

Sub:- APPCB- Zonal Office, Kurnool – Orders of the Hon'ble NGT dated 03.03.2021 and 09.09.2021 in O.A.No.114 of 2020 with regard to violation of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu Rural (M), Ananthapuramu District –Proposals called from your esteemed organization for identifying the sources of odour and also to suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGT – Reg.

Ref:
1. Hon'ble NGT (PB) Order dated 14.10.2020 in O.A. Nos 114 of 2020.
2. Hon'ble NGT (PB) Order dated 03.03.2021in O.A. Nos 114 of 2020.
3. Hon'ble NGT (PB) Order dated 09.09.2021in O.A. Nos 114 of 2020.
4. E-Mail received from SEE, Legal Cell, Board Office, Vijayawada on 13.09.2021.

* * * * *

1) It is to submit that an Original Application No.114 of 2020 was filed by Secretary, St. Mark Educational Institution, Society Group of Institution, Ananthapuramu regarding violations of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu District.
2) The matter was heard by the Hon'ble NGT on 03.03.2021 and the Hon'ble NGT vide order dated 03.03.2021 directed*that "there is need to ensure compliance of environmental norms as well as to assess and recovery of compensation for the past violations, following due process of law. In particular,* ***remedial action be taken to control odour by utilizing latest technology for the purpose".***
3) The Hon'ble NGT has heard the matter again on 09.09.2021 and observed that i) all necessary steps to reduce odour nuisance due to the solvent losses have not been taken by the industry ii) yet to take measures for achieving more than 95% recovery of the solvents, iii) needs to enhance solvent recovery and maintain Work Zone Standards, iv) the industry may operate with duly approved on and off-site emergency plans under MSIHC Rules, 1989 and Board to apply the SOP for spent solvent recovery.

4) The Hon'ble NGT has also directed that ***"The state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health".***The Hon'ble NGT directed the Board to submit the action taken report in the matter on or before 15.12.2021.

In this regard, it is proposed to engage your esteemed organization for identifying the sources of odour and alsoto suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGTdated.09.09.2021. A copy of the Hon'ble NGT order dt.09.09.2021 is herewith enclosed for ready reference.

Hence, it is requested to send the proposals for the above mentioned at the earliest.

Yours faithfully,

JOINT CHIEF ENVIRONMENTAL ENGINEER(FAC)

Encl: a/a

Copy submitted to the JCEE (Unit - II) Board Office, Vijayawada for favour of information and necessary action.

Copy submitted to the SEE (Legal cell), BO, Vijayawada for favour of information and necessary action.

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL OFFICE: KURNOOL
1st Floor, Shankar Shopping Complex, Krishna Nagar Main Road, Kurnool – 518 002.

Phone: 08518-233619
Email: zoknl-jcee@appcb.gov.in

Lr.No. ATP-50/PCB/ZO-KNL/2021 – 261 **Date:** 18 **-10-2021**

To
Prof. S.V.Satyanarayana,
Department of Chemical Engineering
Jawaharlal Nehru Technological University,
Anantapuram - 515 002.
E-mail:svsatya7@gmail.com, svsatya7.chemengg@jntua.ac.in, de@jntua.ac.in
Mobile : 091-9000551419 (O); 9849509167 (P)

Sir,

Sub:- APPCB - Zonal Office, Kurnool – Orders of the Hon'ble NGT dated 03.03.2021 and 09.09.2021 in O.A.No.114 of 2020 with regard to violation of environmental norms by M/s. Siflon Drugs, Rachanapalli (V), Ananthapuramu Rural (M), Ananthapuramu District – Proposals called from your esteemed organization for identifying the sources of odour and also to suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGT – Reg.

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may operate with duly approved on and off-site emergency plans under MSIHC Rules, 1989 and Board to apply the SOP for spent solvent recovery.

4) The Hon'ble NGT has also directed that ***"The state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health".*** The Hon'ble NGT directed the Board to submit the action taken report in the matter on or before 15.12.2021.

In this regard, it is proposed to engage your esteemed organization for identifying the sources of odour and also to suggest the state-of-art odour control systems required to be provided by the industry as per the Orders of the Hon'ble NGT dated.09.09.2021. A copy of the Hon'ble NGT order dt.09.09.2021 is herewith enclosed for ready reference.

Hence, it is requested to send the proposals for the above mentioned at the earliest.

Yours faithfully,

JOINT CHIEF ENVIRONMENTAL ENGINEER(FAC)

Encl: a/a

Copy submitted to the JCEE (Unit - II) Board Office, Vijayawada for favour of information and necessary action.

Copy submitted to the SEE (Legal cell), BO, Vijayawada for favour of information and necessary action.

Item No. 03 (Court No. 1)

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 114/2020

(With report dated 02.09.2021)

Secretary, St. Mark Educational Institution
Society Group of Institution Applicant

Versus

State of Andhra Pradesh Respondent

Date of hearing: 09.09.2021

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Respondent: Mr. TVS Raghavendra Sreyas, Advocate for AP PCB

ORDER

1. Question for consideration is violation of environmental norms by M/s Siflon Drugs at Ranchanpalli, District Anantapur, Andhra Pradesh. Vide order dated 14.10.2020 in OA 114/2020, the Tribunal directed remedial action by the State PCB and District Magistrate, Anantapur and filing of an action taken report.

2. The matter was thereafter considered on 03.03.2021 in the light of report of the State PCB dated 23.02.2021 after inspection by the joint Committee finding continued violation of environmental norms and recommending further steps by the industry particularly with regard to control of odour adversely affecting public health and environment. The operative part of the order is reproduced below:

"1. xxx ……xxx ……xxx
2. Accordingly, a common action taken report has been filed by the State PCB on 23.02.2021 to the effect that a joint Committee was constituted which carried out inspection with reference to nature of the industrial activity, details of water consumption, nature and extent of production, details of effluent generation, details of sources of air pollution, control equipment provided by the industry, details of the process emissions and control equipment provided, effluent treatment details, Hazardous & Non–Hazardous Solid waste details, details of the Environmental Clearance and details of Consent for Operation from A.P. Pollution Control Board. …..

xxx ……xxx ……xxx

5. In the light of above conclusion, there is need to ensure compliance of environmental norms as well as to assess and recovery of compensation for the past violations, following due process of law. In particular, remedial action be taken to control odour by utilising latest technology for the purpose.

6. Learned Counsel appearing for the State PCB has assured that within four weeks remedial action will be ensured and compensation will be assessed and recovered.

7. Accordingly, let an action taken report be filed within two months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF with a copy to the concerned unit for its response, if any, before the next date."

3. In pursuance of above, the State PCB has filed further report on 02.09.2021 after inspections on 04.03.2021 and 05.03.2021 to ascertain the status of compliance. The State PCB issued directions on 18.05.2021 for compliance followed by further inspection on 18.06.2021 and 19.06.2021 and show cause notice dated 01.07.2021, the order dated 10.08.2021. The relevant extracts from the report are:

"*xxx……xxx ……xxx*

12. The APPCB, Zonal Laboratory, Kurnool have conducted stack monitoring for the stack attached to boiler, vent of the scrubber and also Ambient Air Quality & VOC Monitoring within industry's premises, nearby villages and also in the complainant's premises in March, 2021 i.e., on 04.03.2021 & 05.03.2021 and also in June, 2021 i.e., on 18.06.2021 & 19.06.2021.

i. Inferences from the monitorings conducted by APPCB on 04.03.2021 &05.03.2021:

a) The Volatile Organic Compounds (VOCs) monitored within the industry premises show that the VOC values were in the range of 0.1 PPM to 2.8 PPM ***indicating that the characteristic odour nuisance prevailed within the premises****.*

b) The VOCs monitored in the nearby villages viz., Kodimi and Rachanapalli which are at an aerial distance of 0.9 KM and 1.9 KM respectively from the industry, ***show that the VOCs were below detectable limits.***

c) The VOCs monitored in the premises of Chiranjeevi Reddy Institute of Engineering & Technology (CRIT)(belonging to the Petitioner), Rachanapalli (V) at an aerial distance of 0.7 Km from the industry, show the values in the range of 0.1 PPM to 0.2 PPM during night hours from 10:20 PM to 2:30 AM on 4-5th March 2021.

d) The stack & ambient air quality monitoring conducted within the industry shows that the parameters viz., SPM, SO_2 and NO_x are within the stipulated standards. The copies of the anlaysis reports are enclosed as Annexure – 3.

ii. Inferences from the monitoring conducted by APPCB on 18.06.2021 & 19.06.2021:

a) The Stack and Ambient Air Quality Monitoring conducted within the industry's premises shows that the parameters viz., SPM, SO_2 and NO_x are within the stipulated standards.

b) The VOCs monitored within the industry premises show that the VOC values were in the range of 0.1 PPM to 4.4 PPM indicating that the characteristic odour of organic compounds in the industry's premises, which may be due to the solvent losses. The industry has to further reduce solvent losses by improving the efficiency of the solvent recovery systems.

c) The VOCs monitored in the nearby villages viz., Kodimi and Rachanapalli which are at an aerial distance of 0.9 KM and 1.9 KM respectively from the industry, show that the VOCs were within the Below Detectable Limit of 0.1 PPM

d) The VOCs monitored in the premises of CRIT College, Rachanapalli (Complainant premises) at an aerial distance of 0.7 Km from the industry, show that the VOCs were within the Below Detectable Limit of 0.1 PPM. The copies of the analysis reports are enclosed as Annexure – 4

8 to 10. xxx …… xxx …… xxx

11. The latest compliance of the industry to the directions issued by the Board vide Order dated 18.05.2021 are as follows:

S. No.	***Direction***	***Compliance***

1.	*The industry shall take all the necessary steps to reduce the odour nuisance within one month*	*The industry has upgraded the receivers used for the Scrubber with the jacketed receivers with water circulation to control the temperature of the Scrubbing media thereby increase the Scrubbing efficiency.* *Also, the industry has provided i) Scrubber to the vent of the Agitated Thin Film Drier provided for disposal of HTDS effluents and ii) Covered the HTDS effluent storage tanks and provided the ducting system (with ID fan of capacity 5 HP) connected to Scrubber to control odour nuisance from the High TDS effluent storage tanks.* *The industry is also operating MEE and ATFD only during day time to control the odour from the evaporation system.*
2	*The industry shall provide separate stacks for the 4 TPH and 3 TPH boilers as stipulated in the CFO order dt. 21.06.2018 within one month*	*Earlier, the industry is having Common Stack for the 3 TPH & 4 TPH boilers. Now, the industry is not operating the 3 TPH boiler and also disconnected the duct from 3 TPH boiler to the common stack permanently on 01.06.2021.* *The industry representative informed that they are planning to sell the 3 TPH boiler within a month's time.*
3	*The industry shall not manufacture new products and not exceeding the permitted quantity, other than those mentioned in CFO*	*The industry is not manufacturing any new products other than permitted in the Consent Order. Also, after the issue of Show cause notice dt.01.07.2021 by the Board for payment of Environmental Compensation for excess production, the industry has stopped carrying out of excess production.* *Out of the 9 products permitted in the CFO order dt.21.06.2018, the industry has manufactured 3 products namely Oxyclozanide, Niclosamide & Fenbendazole and has carried out production in total (which include all the 3 products) of about 16,500 Kgs i.e., 271.31 Kgs/day (Average) as against the consented quantity of 660 Kgs/Day during the period from 20.06.2021 to 20.08.2021. The industry has manufactured Oxyclozanide – 10,000 Kgs i.e., 163.93 Kgs/day (Average) as against permitted quantity of 166.67 Kgs/day;*

		Niclosamide – 4,500 Kgs i.e., 73.77 Kgs/day (Average) as against permitted quantity of 70 Kgs/day & Fenbendazole – 2,050 Kgs i.e., 33.6 Kgs/day (Average) as against permitted quantity of 33.33 Kgs/day during the above period.
4	*The industry shall dispose the Plastic liners, carboys and scrap waste only to the authorized recyclers*	*The industry is disposing the plastic liners, carboys and scrap waste regularly to M/s. Apex polymers, Visakhapatnam which is an authorized recycler.*
5	*The industry shall operate the two stage scrubbers for scrubbing of process emissions at all emission sources. The industry shall maintain online pH meters to the scrubbers*	*The industry is operating two stage scrubbers for the scrubbing of process emissions i.e., HCl & SO2 emissions emanated from the production Block –B & C. The industry has provided online pH meters for the scrubbers provided in Block - B & Block – C to monitor the scrubbing efficiency and these pH meters are provided with data logger system.*
6	*There shall not be any discharge of wastewater outside the industry premises*	*There is no discharge of wastewater outside the industry premises.*
7	*The online monitoring system shall be calibrated periodically as per equipment supplier's manual/CPCB guidelines before starting the production.*	*The industry has provided online effluent monitoring system for the outlet of RO for monitoring pH, BOD, COD and TSS. The industry has calibrated the online monitoring system on 15.03.2021 and the next due date for calibration of the system is on 15.09.2021.* *A copy of the calibration certificate is enclosed as Annexure-9.*

12. The industry utilizes solvents namely Tolune, Methanol, Mono Chloro Benzene, Acetone and n-hexane and is recovering the solvents using simple distillation/distillation columns. During inspection, the solvent losses from the recovery systems was found to be in the range of 5.02 to 7.15 %. The industry has to take further measures to achieve more than 95% recovery for the solvents in the distillation/recovery process to control the odour nuisance in the premises.

13. From the VOC monitoring conducted by the Board Officials within industry's premises, in the nearby villages and in the Complainant's premises, it was observed that the VOC's were recorded Below the Detectable Levels (BDL) in the nearby villages and also in the complainant's premises. However, the VOC's were recorded in the industry's premises in the range of 0.1 to 2.8 PPM (during monitoring on 04.03.2021 & 05.03.202) and 0.1 to 4.4 PPM (during monitoring on 18.06.2021 & 19.06.2021) which is due to the

solvent losses. The industry has to further reduce solvent losses by improving the efficiency of the solvent recovery systems.

14. The APPCB has reviewed the status of the industry before the External Advisory Committee (Task Force) meeting held on 22.07.2021 and issued directions to the industry vide order dt.10.08.2021 to continue to take all necessary steps to reduce the odour nuisance along with other conditions to comply with."

4. We have considered the matter with the assistance of the learned Counsel for the State PCB.

5. It is clear from the above that all necessary steps to reduce odour nuisance due to the solvent losses have not been taken inspite of direction of the State PCB. While some other steps have been taken, it is necessary to take further steps and also to verify that the violations have actually stopped. As recommended in the report, the industry has yet to take measures for achieving more than 95% recovery of the solvents in the distillation/recovery process to control odour nuisance in the premises. The industry needs to enhance solvent recovery and maintain Work Zone Standards. Standards for channelised VOC emissions may be achieved. The industry may operate with duly approved On and off - site emergency plans under MSIHC Rules, 1989. SPCB may apply the SoP for spent solvent recovery with such conditions as may be necessary for protection of environment and public health.

6. We also find that though compensation has been assessed for the past violations, the commencement of violation has been counted only from the date of inspection without recording any finding that prior to the said date such violation did not exist. As per common course of events once an inspection is found there is a presumption that the same was continuing unless shown otherwise. This aspect may also be looked into by the State PCB. Let a further action taken report and status of

compliance as on November 30, 2021 be ascertained and remedial action taken by the State PCB in exercise of its statutory powers, following due process of law. The State PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health.

7. A further action taken report may be filed on or before December 15, 2021 by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.

List for further consideration on 07.01.2022.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Brijesh Sethi, JM

Dr. Nagin Nanda, EM

September 09, 2021
Original Application No. 114/2020
DV

ANDHRA PRADESH POLLUTION CONTROL BOARD

REGIONAL OFFICE, ANANTHAPURAMU

D.No.6-3-145, Ram Nagar, Revenue, Ward No.6, Ananthapuramu – 515004

Tele:08554 226066, Email: roatp-ee1@appcb.gov.in

Lr.No.88/APPCB/RO: ATP/NGT/2021- 2480 **Date:16.11.2021**

To,
M/s. Siflon Drugs,
Rachanapalli (V),
Ananthapuramu Rural (M),
Ananthapuramu District

Sub: - APPCB – RO: ATP – Orders of the Hon'ble NGT dated 09.09.2021 in O.A.No.114 of 2020 – Implementation of the recommendation of the expert committee from Indian Institute of Chemical Technology (IICT), Hyderabad and Department of Chemical Engineering, JNTU, Ananthapuramu, etc., to identify the sources of odour and to suggest the state-of-art odour control systems required to be provided by the industry – Compliance on the recommendations – Compliance report - Reg.

Ref: -
1. Hon'ble NGT (PB) Order dated 14.10.2020 in O.A. Nos 114 of 2020.
2. Hon'ble NGT (PB) Order dated 03.03.2021in O.A. Nos 114 of 2020.
3. Hon'ble NGT (PB) Order dated 09.09.2021in O.A. Nos 114 of 2020.
4. Report of the expert Committee from IICT, Hyderabad received on 12.10.2021.
5. Instructions received from the JCEE, Unit-II, Board Office, Vijayawada vide E-mail Dated 16.11.2021.

* * * *

It is to inform you that, the Hon'ble NGT (PB), New Delhi heard the matter on 09.09.2021 and observed that i) all necessary steps to reduce odour nuisance due to the solvent losses have not been taken, ii) yet to take measures for achieving more than 95% recovery of the solvents, iii) needs to enhance solvent recovery, iv) maintain Work Zone Standards, v) operate with duly approved On and off-site emergency plans and Board to apply the SoP for spent solvent recovery. The Tribunal further directed "the state PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health."

The APPCB vide letter dated 18.10.2021 requested the Indian Institute of Chemical Technology (IICT), Hyderabad and Department of Chemical Engineering, JNTU, Ananthapuramu, etc., to identify the sources of odour and to suggest the state-of-art odour control systems required to be provided by the industry.

On the request of the APPCB, Sri Dr. A. Gangagni Rao, Chief Scientist, Council of Scientific and Industrial Research (CSIR), Indian Institute of Chemical Technology (IICT), Hyderabad, along with Sri. S.V. Satyanarayana, Professor, Department of Chemical Engineering, Jawaharlal Nehru Technological University, Anantapuramu and Dr. S. Venkata Mohan, Sr. Pr. Scientist, Council of Scientific and Industrial Research (CSIR), Indian Institute of Chemical Technology (IICT), Hyderabad visited the industry on 09.11.2021 and submitted their report to the Board on 12.11.2021. A copy of the report is enclosed.

Vide reference 5th cited above instructions were issued to communicate the report of the expert committee to the industry with instructions to comply with recommendations of the committee in **3 weeks time** and also to implement any other additional measures necessary to control odour and to ensure recover of solvents not less than 95%.

Hence, you are hereby directed to implement the recommendations of the expert committee within **3 weeks time** and also to implement any other additional measures necessary to control odour and to ensure recover of solvents not less than 95%. The compliance report on the recommendations of the committee along with photographic evidences shall be submitted to this office **within 3 weeks** for taking further necessary action in the matter.

MBS Shankara Rao
ENVIRONMENTAL ENGINEER

Copy submitted to the JCEE, Unit-II, Board Office, Vijayawada for favour of kind information.

Copy submitted to the JCEE, Zonal Office, Kurnool for favour of kind information.

Copy submitted to the SEE (Legal cell), BO, Vijayawada for favour of kind information.

Copy Recieved

M/S Siflon Drugs

16/11/2021

General Manager Operations

SIFLON DRUGS ANANTAPUR

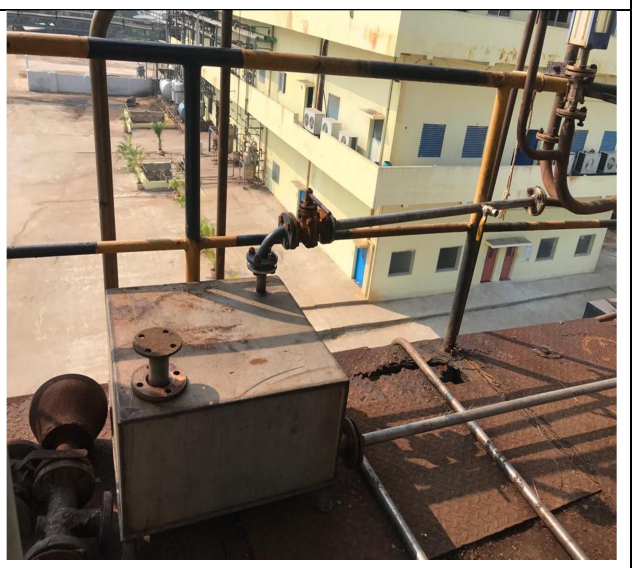
ANNEXURE - 10

Photographs depicting the state-of-art odour control systems suggested by expert team were implemented by the industry

Candy filter with granular activated carbon adsorption system for the vents of the scrubbers provided at production Blocks

Candy filter with granular activated carbon adsorption system for the vent of the condenser provided for the two solvent distillation columns

Connected the condenser vent of mother liquor storage tank (day tank) to the candy filter with granular activated carbon adsorption system of Acetone distillation column



100 Liters of closed collection tank for collection of sampling solution for each of the two distillation columns

	
Vent of the scrubber is provided with candy filter with granular carbon adsorption system to HTDS & LTDS Equalizing tanks	Vent of the scrubber is provided with candy filter with granular carbon adsorption system to aeration tanks of biological ETP
	
Railing to all stairs of the distillation column	Candy filter with granular carbon adsorption for the vent of ATFD scrubber outlet

Covered Equalizing tanks (for both high and low TDS effluents) and also aeration tanks of the biological ETP with powder coated sheets.

Separate room for the storage of Sulphur powder bags

Replaced the HDPE pipe with MS pipe at Solvent storage tank area

ANNEXURE - 6

Photographs depicting the state-of-art odour control systems suggested by expert team were implemented by the industry

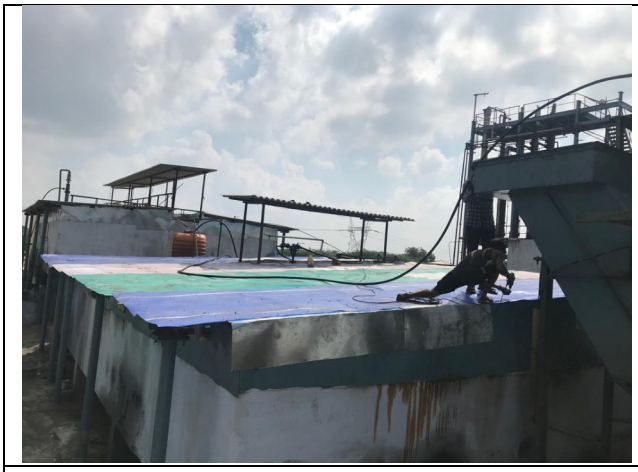
Candy filter with granular activated carbon adsorption system for the vents of the scrubbers provided at production Blocks

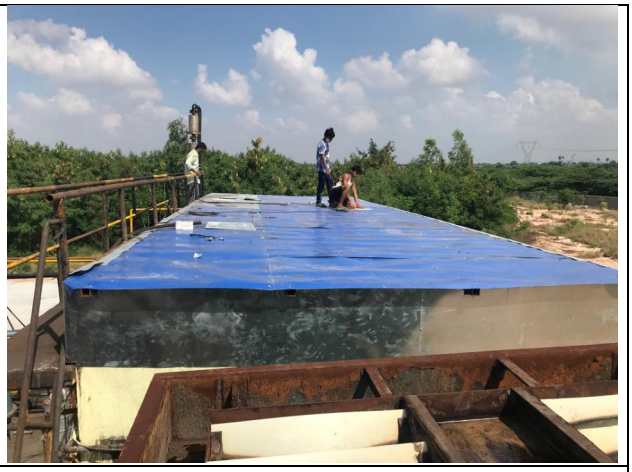
Candy filter with granular activated carbon adsorption system for the vent of the condenser provided for the two solvent distillation columns

Connected the condenser vent of mother liquor storage tank (day tank) to the candy filter with granular activated carbon adsorption system of Acetone distillation column

100 Liters of closed collection tank for collection of sampling solution for each of the two distillation columns

	
Ventof the scrubber is provided with candy filter with granular carbon adsorption system to HTDS & LTDS Equalizing tanks	Ventof the scrubber is provided with candy filter with granular carbon adsorption system to aeration tanks of biological ETP
	
Railing to all stairs of the distillation column	Candyfilter with granular carbon adsorption for the vent of ATFD scrubber outlet





Covered Equalizing tanks (for both high and low TDS effluents) and also aeration tanks of the biological ETP with powder coated sheets.

Separate room for the storage of Sulphur powder bags

Replaced the HDPE pipe with MS pipe at Solvent storage tank area

ANNEXURE - 7

ANDHRA PRADESH POLLUTION CONTROL BOARD
D.No.33-26-14D/2, Near Sunrise Hospital, Pushpa Hotel Center,
Chalamalavari Street, Kasturibaipet, Vijayawada – 520010
Phone: 0866-2463200, Website: https://pcb.ap.gov.in

Notice No.82/APPCB/UH-II/TF/ANTP/2016- **31/12/2021**

NOTICE

Sub: APPCB – UH-II - TF – M/s.Siflon Drugs, Sy.No.25/4, Rachanapalli (V), Anantapur District – Complaints received – O.A No 114/2020 filed in Hon'ble NGT order dated 09.09.2021 – Inspection of the industry by the Board officials on 07.12.2021 & 08.12.2021 – Issue of directions & levy of EC - **Notice** - Issued – Reg.

Ref:

1. Consent Order No. APPCB /KNL /ATP /1060 /HO /CFO&HWA / 2018, dated 21.06.2018 with a validity upto 30.04.2022.
2. Complaint from Sri Thopudurthi Prakash Reddy, Hon'ble MLA, Rapthadu Assembly Constituency.
3. Stop production Order No.82/APPCB/UH- II/ANTP/2020, dated 16.06.2020.
4. Revocation of stop production order issued dated 22.07.2020.
5. Hon'ble NGT Order in OA No 114/2020 dated 03.03.2021.
6. Complaint from Mr. Eswar Reddy and 23 others against the industry forwarded by the CMO received on 08.04.2021.
7. Directions vide order No.82/APPCB/UH-II/TF/ANTP/2016, Date: 18.05.2021.
8. Inspection of the industry by the RO, Ananthapur Officials on 19.06.2021.
9. Show Cause Notice to the industry levying EC dated 01.07.2020.
10. Directions vide order No.82/APPCB/UH-II/TF/ANTP/2016-292, Date: 10.08.2021.
11. Hon'ble NGT Order in OA No 114/2020 dated 09.09.2021.
12. Board directions dated 18.10.2021.
13. Inspection of the industry by the Board Officials on 07.12.2021 & 08.12.2021.

* * *

WHEREAS you are operating industry in the name of M/s. Siflon Drugs located at Sy.No.25/4, Rachanapalli (V), Anantapuram District, A.P in an extent of 13.19 acres and engaged in the manufacture of Veterinary Drugs & Intermediates.

WHEREAS the Board vide reference 1st cited, issued CFO dated 21.06.2018 valid upto 30.04.2022.

WHEREAS the Board vide reference 2nd cited, received complaint from Sri Thopudurthi Prakash Reddy, Hon'ble MLA, Rapthadu Assembly Constituency regarding Pollution problems being caused from M/s. Siflon Drugs, Sy.No.25/4, Rachanapalli (V), Anantapuram District dt 22.05.2020.

WHEREAS the Board vide reference 3rd cited, issued stop production order to the industry after reviewing the issue in the EAC (TF) meeting held on 04.06.2020

WHEREAS the industry has submitted the BG for Rs 4,00,000 Lakhs dt 09.07.2020 valid upto 08.07.2021.

WHEREAS the Board issued revocation of stop production order to the industry vide order

dated 22.07.2020 duly stipulating specific conditions.

WHEREAS the industry paid the Environmental Compensation of Rs.2,40,000/- through a demand draft on 23.09.2020.

WHEREAS petitions filed before the Hon'ble NGT in O.A.Nos.114/2020 & 180/2020 against M/s. Siflon Drugs, Rachanapalli, Ananthapuramu District .

WHEREAS the Board vide reference 6th cited, has received complaint on 08.04.2021 from Sri Eswar Reddy and 23 others forwarded by the CMO against the industry. Earlier, Sri A. Praveena and 74 others submitted representation to the CMO against the industry.

WHEREAS the Board vide reference 7th cited, issued directions to the industry vide order dated 18.05.2021 with certain conditions.

WHEREAS the Board vide reference 9th cited, issued Show Cause Notice to your industry dated 01.07.2021 levying Environmental Compensation for Rs.32,90,000/. After deducting BG Amount of Rs. 4 lakhs , the industry paid EC of Rs. 10,00,000/- vide DD number 049352 dated 20.07.2021 and Rs.18.90 Lakhs with DD No. 049445 date 02.09.2021.

WHEREAS Board officials again inspected your industry on 19.06.2021 and the Board vide reference 10th cited, issued directions to the industry vide order dated 10.08.2021 with certain conditions.

WHEREAS the Hon'ble NGT vide reference 11th cited passed orders on 9.09.2021 as follows.

"We also find that though compensation has been assessed for the past violations, the commencement of violation has been counted only from the date of inspection without recording any finding that prior to the said date such violation did not exist. As per common course of events once an inspection is found there is a presumption that the same was continuing unless shown otherwise. This aspect may also be looked into by the State PCB. Let a further action taken report and status of compliance as on November 30, 2021 be ascertained and remedial action taken by the State PCB in exercise of its statutory powers, following due process of law. The State PCB may take measures to ensure that state-of-art odour control systems are in place in the interest of protection of environment and public health".

WHEREAS the Board vide letter dated 18.10.2021 requested the Indian Institute of Chemical Technology (IICT), Hyderabad and Department of Chemical Engineering, JNTU,Ananthapuramu, etc., to identify the sources of odour and to suggest the state-of-art odour control systems required to be provided by the industry as per the orders of Hon'ble NGT order dated 09.09.2021.

WHEREAS the Experts from IICT, Hyderabad and JNTU, Ananthapuramu has suggested the 11 Nos.of state-of-art odour control systems to M/s. Siflon Drugs to further control odour

from the industry and the Board vide Order dated 16.11.2021 communicated the report of the expert committee of IICT, Hyderabad to M/s. Siflon Drugs and directed the industry to implement the recommendations of the expert committee within 3 weeks and to implement any other additional measures necessary to control odour and to ensure recover of solvents not less than 95%.

WHEREAS the Board officials inspected the industry on 07.12.2021 and 08.12.2021 to verify the status of compliance of the industry to the state-of-art odour control systems suggested by IICT, Hyderabad and reported the following implementation status -

1. The industry has provided candy filter with granulated carbon adsorption system for the vents of the Scrubbers provided at production Blocks.
2. The industry has provided candy filter with granular activated carbon adsorption system for the vents of the condenser provided for the two solvent distillation columns.
3. The industry has connected the condenser vent of mother liquor storage tanks (day tank) to the candy filter with granular carbon adsorption system.
4. The industry has provided 100 Liters of closed collection tank for collection of sampling solution for each of the two distillation columns.
5. The industry has provided railing in all stairs of the distillation column.
6. During inspection, it was observed that the industry was in process of installation of separate cooling tower of capacity 50 TR for the condensers provided to the solvent storage tanks. The industry has to install temperature indicators for the cooling tower for recording inlet and outlet temperatures.
7. The industry has provided candy filter with granular carbon adsorption for the vent of ATFD scrubber outlet.
8. The industry has covered Equalizing tanks (for both high and low TDS effluents) and also aeration tanks of the biological ETP with powder coated sheets. The industry has provided suction hood (with ID fan of capacity 5 HP) for HTDS & LTDS Equalizing tanks and connected to scrubber. The vent of the scrubber is provided with candy filter with granular carbon adsorption system. The industry has provided suction hood (with ID fan of capacity – 5 HP) for the aeration tanks of biological ETP. The industry has provided scrubber for the aeration tank and vent of the scrubber is provided with candy filter granulated carbon adsorption system.
9. The industry has provided separate room for the storage of Sulphur powder bags. The industry has to provide exhaust arrangement connected to scrubbing system.
10. The unit is regularly checking the leakages of all the flange joints.
11. The industry has replaced the HDPE pipe with MS pipe at Solvent storage tank area and the industry has to replace the HDPE pipes with MS pipes at Effluent Treatment area to avoid leakages.

WHEREAS the industry has implemented 9 of the state-of-art odour control system recommended by expert team of IICT, Hyderabad and JNTU, Ananthapuramu and has to implement the other 2 recommendations of the expert team i.e., providing of separate cooling tower for the condensers of solvent storage tanks and providing exhaust arrangement connected to scrubbing system for the sulphur storage room.

WHEREAS the VOC monitoring was conducted by the Board Officials within industry's premises, in the nearby villages and in the Complainant's premises, it was observed that the VOC's were recorded Below the Detectable Levels (BDL) in the nearby villages and also in the complainant's premises. However, the VOC's were recorded in the industry's premises in the range of 0.15 to 3.95 PPM which may be due to the solvent losses.

WHEREAS as per directions of the Hon'ble NGT, the Board relooked into the issue of

Environmental Compensation and noted that violations were observed from 16.11.2011 as reflected in directions issued on 13.12.2011 (based on the inspection on 16.11.2011) and also on 02.04.2017 (based on inspection on 18.02.2017) and proposed to levy of environmental compensation for the past violations for additional violation period from 16.11.2011 to 22.05.2020. The board earlier levied the Environmental compensation of Rs. 2.4 lakhs for the periods from 23.05.2020 to 16.06.2020 and Rs. 32.90 lakhs for the period from 25.07.2020 to 19.06.2021 and the unit was under stop production from 17.06.2020 to 24.072020 The proposed Environmental Compensation for additional violation period from 16.11.2011 to 22.05.2020 calculation is as follows:

S. No.	Name of the Industry	PI	S	LF	R (Rs.)	N (days)	Environmental Compensation EC=PI x N x R x S x LF (Rs.)
EC calculated taking No.of violation days based on the APPCB directions dated.13.12.2011:							
1.	M/s.Siflon Drugs, Sy.No.25/4, Rachanapalli (V), Ananthapur District.	80	0.5	1	250	3110 Days (From 16.11.2011 to 22.05.2020)	Rs.3,11,00,000/-

WHEREAS the Board hereby issues following directions and you are hereby directed to file objections on the directions if any, within 15 days time to the Board:

1. The industry shall pay the Environmental Compensation of Rs. 3,11,00,000/- for additional violation period from 16.11.2011 to 22.05 .2020.
2. The industry shall not manufacture any un-consented products and shall not exceed the production quantities permitted.
3. The industry shall segregate the Sulphur powder bags in raw material warehouse and to store them in a separate closed room or enclosure with proper exhaust arrangement connected to scrubbing system.
4. The industry shall use cold water by adding ice blocks in the Cooling tower provided for the vent condenser of solvent storage tanks and also to observe the inlet and outlet temperature by providing the thermometer.
5. The industry shall evaluate the odour control measures undertaken and to take additional measures needed to further minimize odour nuisance..
6. The industry shall ensure continuous operation of ZLD System and ensure effective operation of Air Pollution Control Systems including Scrubbing Systems.

Now therefore, in compliance of the Hon'ble NGT orders noted above and in exercise of the powers vested under Section 31 (A) of the Air (Prevention & Control of Pollution) Amendment Act, 1987 and Section 33 (A) of the Water (Prevention and Control of Pollution) Amendment Act, 1988, you are hereby directed to file objections on the directions if any, within 15 days time to the Board failing which it will construe that you have no objections on EC and directions proposed .

Vijay Kumar Gsrkr Ias

Secretary To Government

To
M/s. Siflon
Drugs,
Sy. No. 25/4,
Rachanapalli(V),
Anantapur
District

Copy to:

1. The Joint Chief Environmental Engineer, A.P. Pollution Control Board, Zonal Office, Kurnool for information.
2. The Environmental Engineer, A.P. Pollution Control Board, Regional Office, Anantapur for information and necessary action.

Signed by Vijay Kumar
Gsrkr Ias
Date: 31-12-2021 11:30:42
Reason: Approved