



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
 Report of Analysis

ROA No. 178/2020-21 dated 28.09.2020.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	17.09.2020 3.55 P.M	Date and Time of Sample receipt at lab	18.09.2020 at 12.15 PM
Point of collection	1 ETP RO Permeate (Treated)		
	2		
	3		

Sl. No	DEE Code no		SN 618	
	Lab code No		292	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	8.23	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	12	Gravimetric method
3	Total Dissolved Solids @ 180° C	mg/L	625	Gravimetric method
4	Chloride as Cl	mg/L	171	Argentometric method
5	Sulphate as SO ₄	mg/L	75	Turbidimetric method
6	BOD @ 27°C 3 days	mg/L	9	DO meter method
7	COD	mg/L	200	Open Reflux method
8	Oil & Grease	mg/L	<1.0	Partition Gravimetric method
9	Copper as Cu	mg/L	<0.033	AAS Method
10	Zinc as Zn	mg/L	<0.01	AAS Method
11	Cadmium as Cd	mg/L	<0.013	AAS Method
12	Lead as Pb	mg/L	<0.07	AAS Method
13	Nickel as Ni	mg/L	<0.05	AAS Method
14	Total Chromium as Cr	mg/L	<0.01	Colorimetric method
15	Hexavalent Chromium Cr ⁺⁶	mg/L	<0.01	Colorimetric method

Chief Scientific Officer (Lab) 11/9/20
 TNPCB, DEL M.M.Nagar

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
 General Manager - Operations



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
Report of Analysis

ROA No. 323/2020-21 dated 5.12.2020.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	6.11.2020 11.25 am	Date and Time of Sample receipt at lab	6.11.2020 5.20 pm
Point of collection	1 ETP RO Permeate (Treated)	2	3

Sl. No	DEE Code no		SN 658	
	Lab code No		499	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	7.60	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	65	Gravimetric method
3	Total Dissolved Solids @ 180° C	mg/L	619	Gravimetric method
4	Chloride as Cl	mg/L	146	Argentometric method
5	Sulphate as SO ₄ ⁻²	mg/L	40	Turbidi metric method
6	Oil & Grease	mg/L	<1.0	Partition Gravimetric method
7	BOD @ 27°C 3 days	mg/L	27	DO meter method
8	COD	mg/L	240	Open Reflux method
9	Copper as Cu	mg/L	<0.03	Colorimetric method
10	Zinc as Zn	mg/L	<0.01	Colorimetric method
11	Cadmium as Cd	mg/L	<0.013	AAS Method
12	Lead as Pb	mg/L	<0.07	AAS Method
13	Nickel as Ni	mg/L	<0.05	AAS Method
14	Total Chromium as Cr	mg/L	<0.01	Colorimetric method
15	Hexavalent Chromium Cr ⁺⁶	mg/L	<0.01	Colorimetric method

Chief Scientific Officer (Lab)
TNPCCB, DEL M.M.Nagar

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager - Operations

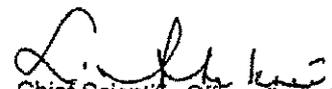


TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
Report of Analysis

ROA No.711/2020-21 dated 01.02.2021.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	29.12.2020 5.55 pm	Date and Time of Sample receipt at lab	30.12.2020 11 .30 am
Point of collection	1 ETP RO Permeate (treated)		
	2		
	3		

Sl. No	DEE Code no		SN 715	
	Lab code No		766	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	7.60 /	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	43 /	Gravimetric method
3	Total Dissolved Solids @ 180° C	mg/L	822 /	Gravimetric method
4	Chloride as Cl	mg/L	313 /	Argentometric method
5	Sulphate as SO ₄	mg/L	123 /	Turbidi metric method
6	Oil & Grease	mg/L	<1.0 /	Partition Gravimetric method
7	BOD @ 27°C 3 days	mg/L	23 /	DO meter method
8	COD	mg/L	216 /	Open Reflux method
9	Hexavalent Chromium Cr ⁺⁶	mg/L	<0.01 /	Colorimetric method
10	Sulphide as S ⁻²	mg/L	<1 /	Iodometric method
11	Phosphate as Po ₄ ²⁻	mg/L	<0.5 /	Ascorbic Acid method
12	Mercury	mg/L	<0.5 /	Cold vapour technique method
13	Phenolic Compounds as Phenols	mg/L	<0.10 /	Chloroform Extraction method
14	Lead	mg/L	<0.07 /	AAS method


Chief Scientific Officer (Lab)
TNPCB, DEL M.M.Nagar

For SUN PHARMACEUTICAL INDUSTRIES LTD


M.A. JOY
General Manager - Operations



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
Report of Analysis

ROA No. 784/2020-21 dated 22.02.2021.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	28.01.2021 4.35 pm	Date and Time of Sample receipt at lab	29.01.2021 3.30 pm
Point of collection	1 ETP RO Permeate (Treated)		
	2		
	3		

Sl. No	DEE Code no		SN 735	
	Lab code No		890	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No	7.49	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	15	Gravimetric method
3	Total Dissolved Solids @ 180° C	mg/L	343	Gravimetric method
4	Chloride as Cl	mg/L	38	Argentometric method
5	Sulphate as SO ₄	mg/L	13	Turbidi metric method
6	Oil & Grease	mg/L	<1.0	Partition Gravimetric method
7	BOD @ 27°C 3 days	mg/L	11	DO meter method
8	COD	mg/L	136	Open Reflux method
9	Copper as Cu	mg/L	<0.033	AAS Method
10	Zinc as Zn	mg/L	<0.05	AAS Method
11	Cadmium as Cd	mg/L	<0.013	AAS Method
12	Lead as Pb	mg/L	<0.07	AAS Method
13	Nickel as Ni	mg/L	<0.05	AAS Method
14	Total Chromium as Cr	mg/L	<0.01	Colorimetric method
15	Hexavalent Chromium Cr ⁺⁶	mg/L	<0.01	Colorimetric method

Chief Scientific Officer (Lab) 26/1/21
TNPCB, DEL M.M.Nagar

For SUN PHARMACEUTICAL INDUSTRIES LTD.

M.A. JOY
General Manager - Operations



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar

Report of Analysis

ROA No.908 /2020-21dated 17.03.2021.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board, M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	26.2.2021 1.50 pm	Date and Time of Sample receipt at lab	26.2.2021 4.15 pm
Point of collection	1 ETP RO Permeate(Treated)		
	2		
	3		

Sl.No	DEE Code no		SN 770	
	Lab code No		1060	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	7.61	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	12	Gravimetric method
3	Total Dissolved Solids @ 180° C	mg/L	438	Gravimetric method
4	Chloride as Cl	mg/L	22	Argentometric method
5	Sulphate as SO ₄	mg/L	5	Turbidimetric method
6	BOD @ 27°C	mg/L	8	DO meter method
7	COD	mg/L	168	Open reflux method
8	Hexavalent Chromium Cr ⁺⁶	mg/L	<0.01	Colorimetric method
9	Cyanide as CN	mg/L	<0.05	Colorimetric method
10	Sulphide as S ⁻²	mg/L	<1	Iodometric method
11	Lead as Pb	mg/L	<0.07	AAS method
12	Phosphate as PO ₄ ³⁻	mg/L	3.5	Ascorbic Acid method
13	Phenolic Compounds as Phenols	mg/L	<0.10	Chloroform Extraction method
14	Mercury as Hg	mg/L	<0.05	Cold Vapour technique

Chief Scientific Officer (Lab) 26/3/21
TNPCB, DEL M.M.Nagar

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager - Operations



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar

Report of Analysis

ROA No. 13/2021-22 dated 23.04.2021.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board, M.M.Nagar		
Nature and number of samples	Four number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	08.04.2021 04.30 pm to 04.55 pm	Date and Time of Sample receipt at lab	09.04.2021 11.00 am
Point of collection	1 STP Outlet (Treated) 2 RO Permeate (Treated) 3 RO Reject (Treated) 4 MEE Condensate (Treated)		

Sl. No	DEE Code no		SSKA - 05	SSKA - 06	SSKA - 07	SSKA - 08	
	Lab code No		21	22	23	24	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit					
1	pH @ 25°C	No.	7.44	7.34	7.83	8.33	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	42	27	77	19	Gravimetric method
3	Total Dissolved Solids @ 180° C	mg/L	694	466	9031	4907	Gravimetric method
4	Chloride as Cl ⁻¹	mg/L	86	65	3669	660	Argentometric method
5	Sulphate as SO ₄ ⁻²	mg/L	14	18	479	73	Turbidimetric method
6	BOD @ 27° C	mg/L	21	19	27	12	DO meter method
7	COD	mg/L	248	216	232	200	Open reflux method
8	Hexavalent Chromium Cr ⁻⁶	mg/L	-	<0.01	<0.01	<0.01	Colorimetric method
9	Cyanide as CN	mg/L	-	<0.05	<0.05	<0.05	Colorimetric method
10	Sulphide as S ⁻²	mg/L	-	<1	<1	<1	Iodometric method
11	Mercury as Hg	ng/L	-	<0.05	<0.05	<0.05	Cold Vapour Technique
12	Phosphate as PO ₄ ⁻³	mg/L	-	3.5	2.5	4	Ascorbic Acid method
13	Phenolic Compounds as Phenols	mg/L	-	<0.10	<0.10	<0.10	Chloroform Extraction method
14	Lead as Pb	mg/L	-	<0.07	<0.07	<0.07	AAS method

(Signature)
Chief Scientific Officer (Lab)

TNPCB, DEL M.M.Nagar. 26/4/21

For SUN PHARMACEUTICAL INDUSTRIES LTD.

(Signature)
M.A. JOY
General Manager - Operations



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
Report of Analysis

ROA No. 177/2020-21 dated 21.09.2020.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	17.09.2020 3.50 PM	Date and Time of Sample receipt at lab	18.09.2020 12.15 PM
Point of collection	1	STP Outlet (Treated)	
	2		
	3		

Sl. No	DEE Code no		SN 617	
	Lab code No		291	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	7.51 ✓	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	39 ✗	Gravimetric method
3	BOD @ 27°C 3 days	mg/L	23 ✗	DO meter method
4	COD	mg/L	160 ✗	Open Reflux method
5	Ammonical Nitrogen as NH ₃ -N	mg/L	<2 ✓	Titration method

Chief Scientific Officer (Lab)
TNPCB, DEL M.M.Nagar

For SUN PHARMACEUTICAL INDUSTRIES LTD.

M.A. JOY
General Manager - Operations

13/12/20
65



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
Report of Analysis

ROA No. 322/2020-21 dated 03.12.2020.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	06.11.2020 11.15 AM	Date and Time of Sample receipt at lab	06.11.2020 5.20 PM
Point of collection	1 STP Outlet (Treated)		

Sl. No	DEE Code no		SN 657	
	Lab code No		498	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	7.32	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	19	Gravimetric method
3	BOD @ 27°C 3 days	mg/L	7	DO meter method
4	COD	mg/L	40	Open Reflux method
5	Ammonical Nitrogen as NH ₃ ^{-N}	mg/L	<2	Titration method

Chief Scientific Officer (Lab)
TNPCB, DEL M.M.Nagar

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager - Operations



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
Report of Analysis

ROA No. 710/2020-21 dated 11.1.2021.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One numbers of trade effluent /sewage samples/River Sample	Sample quantity	2.5L
Date and Time of Sample Collection	29.12.2020 5.40 pm	Date and Time of Sample receipt at lab	30.12.2020 11.30 am
Point of collection	1	STP Outlet (Treated)	
	2		
	3		

Sl.No.	DEE Code no	Unit	SN-714	
	Lab code No		765	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	7.33	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	63	Gravimetric method
3	BOD @ 27°C 3 days	mg/L	17	DO meter method

Chief Scientific Officer (Lab)
TNPCB, DEL, M.M.Nagar

18/01/21

SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager, Operations



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
Report of Analysis

ROA No. 783/2020-21 dated 22.02.2021.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples/Lake water	Sample quantity	2.5L
Date and Time of Sample Collection	28.01.2021 4.30 pm	Date and Time of Sample receipt at lab	29.01.2021 3.30 pm
Point of collection	1 STP Outlet (Treated)		
	2		
	3		

Sl. No	DEE Code no		SN 734	
	Lab code No		889	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	7.72	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	57	Gravimetric method
3	BOD @ 27°C 3 days	mg/L	16	DO meter method
4	COD	mg/L	216	Open Reflux method
5	Ammonical Nitrogen as NH ₃ ^N	mg/L	<2	Titration method

Chief Scientific Officer (Lab) 26/2/21
TNPCC, DEL M.M.Nagar

For SUN PHARMACEUTICAL INDUSTRIES LTD.

M.A. JOY
General Manager - Operations



TAMIL NADU POLLUTION CONTROL BOARD
DISTRICT ENVIRONMENTAL LABORATORY M.M.Nagar
Report of Analysis

ROA No. 907/2020-21 dated 17.03.2021.

Name and address of the sender	District Environmental Engineer Tamil Nadu Pollution Control Board M.M.Nagar		
Nature and number of samples	One number of trade effluent /sewage samples	Sample quantity	2.5L
Date and Time of Sample Collection	26.2.2021 1.40 pm	Date and Time of Sample receipt at lab	26.2.2021 4.15 pm
Point of collection	1 STP Outlet (Treated)		
	2		
	3		

Sl. No	DEE Code no		SN -769	
	Lab code No		1059	Tested as per APHA 22 nd Edition 2012
	Parameters	Unit		
1	pH @ 25°C	No.	7.67	Electrometric method
2	Total Suspended Solids @ 105° C	mg/L	48	Gravimetric method
3	BOD @ 27°C 3 days	mg/L	21	DO meter method

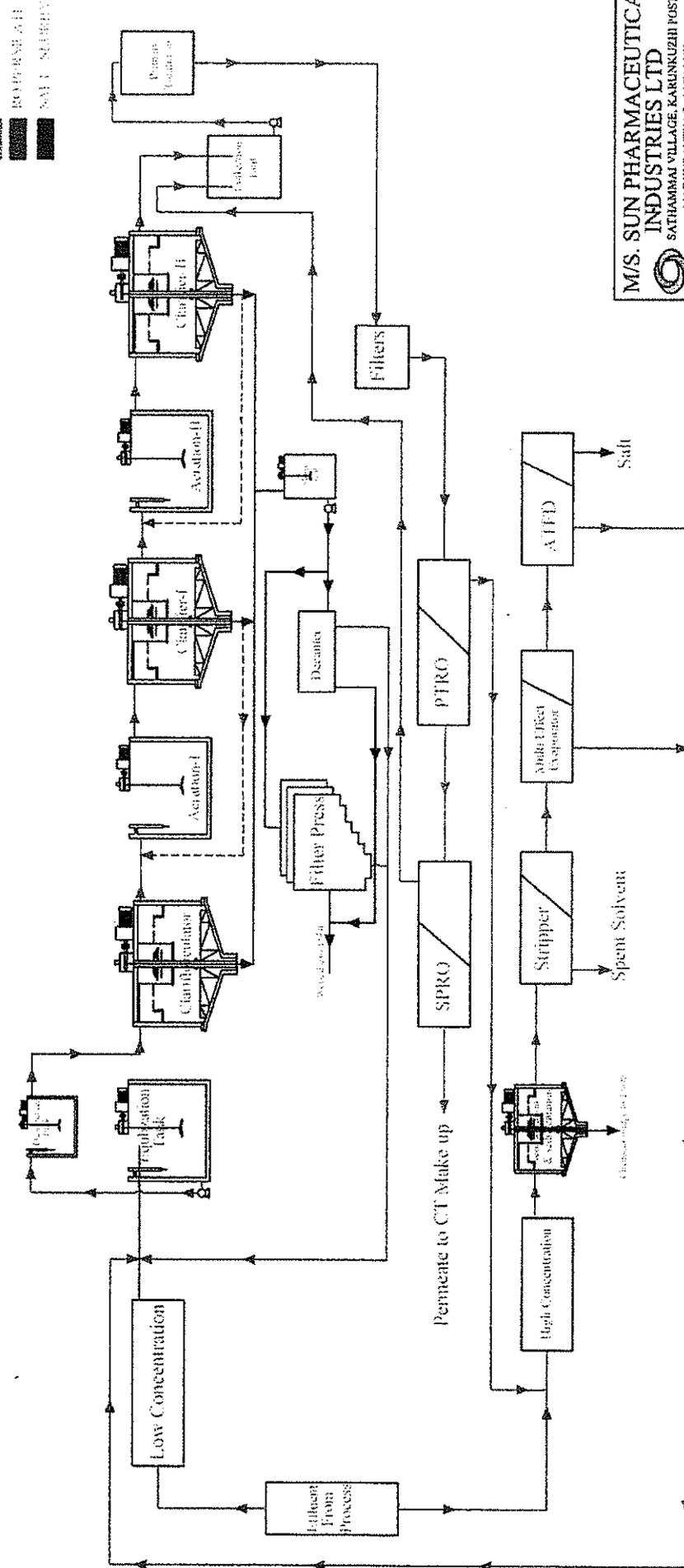
Chief Scientific Officer (Lab)
TNPCC, DEL M.M.Nagar 26/3/21

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager - Operations

EIP-ZERO LIQUID DISCHARGE SCHEMATIC PROCESS FLOW DIAGRAM

LOW LIQD
 HIGH LIQD
 RECOVERABLE
 SALT SUPPLY



M/S. SUN PHARMACEUTICAL INDUSTRIES LTD
 SATNAMRAJ VILLAGE, KARUNKUZHI POST
 MADHURANTHARAM TALUK,
 KANCHEEPURAM DISTRICT - 603 303.
 Title : ZERO LIQUID DISCHARGE SCHEMATIC
 PROCESS FLOW DIAGRAM

For SUN PHARMACEUTICAL INDUSTRIES LTD

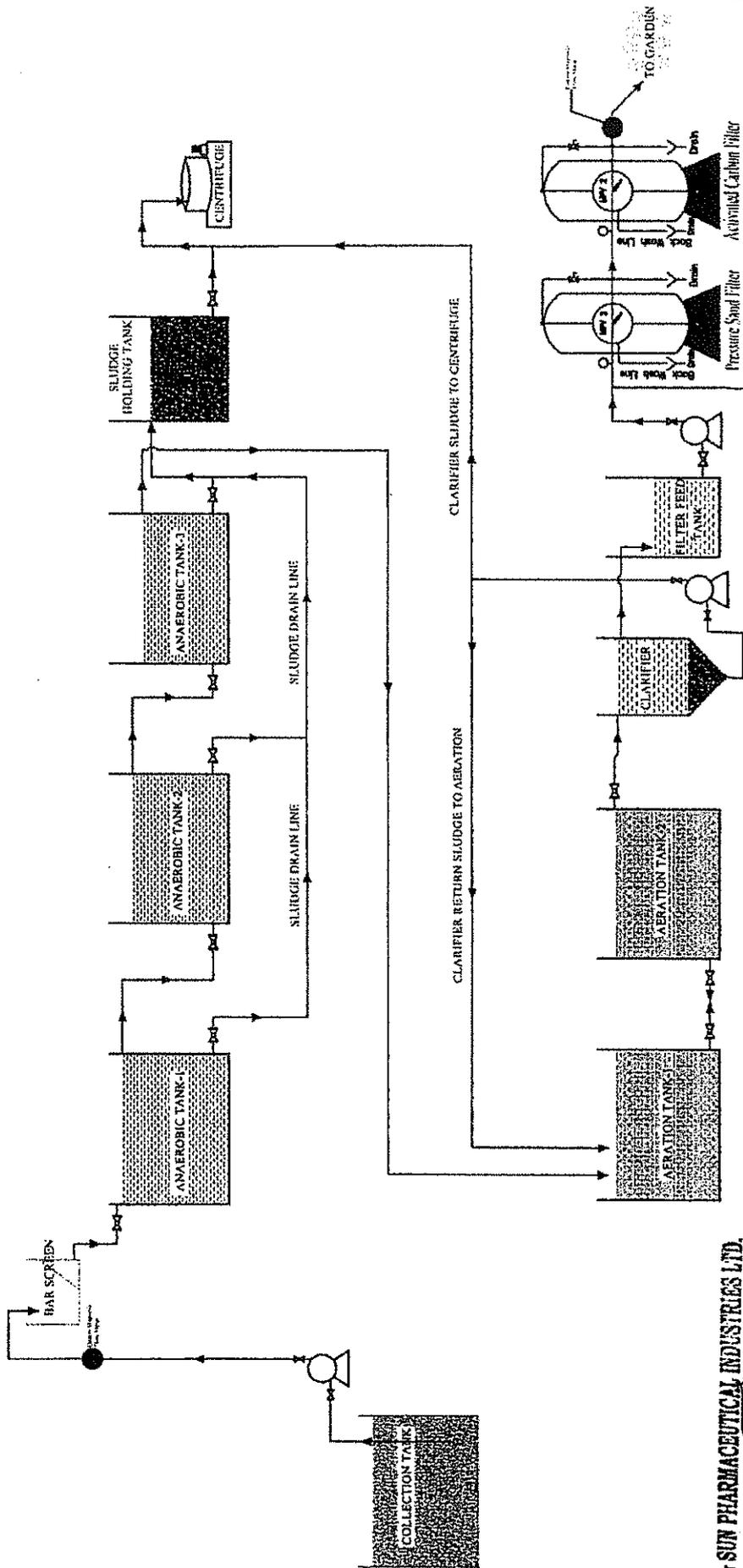
M.A. JOY
 General Manager - Operations



SUN PHARMACEUTICAL INDUSTRIES LTD.

SATHAMMAI VILLAGE, KARUNKUZZHI (P.O), MADURANTHAGAM (T.K), KANCHEJIPURAM (DIST)

SEWAGE TREATMENT PLANT - SCHEMATIC FLOW DIAGRAM



For SUN PHARMACEUTICAL INDUSTRIES LTD.

M A JOY
General Manager - Operations

For SUN PHARMACEUTICAL INDUSTRIES LTD.

M. A. JOY
General Manager - Operations

"Vedanthangal lake is on the upstream side of Puthupet lake, Sitheri pond and Maduranthagam is the largest lake/water body into which most of the smaller water bodies drain during the good monsoon. Further, water in Maduranthagam drains towards eastern part and there is no chance that the water from these water bodies gets into Vedanthangal lake/Bird Sanctuary."

"Based on the facts and details mentioned above, it is concluded that, the submissions made in Para 10, 13 and 14 in the OA No.88/2020 by the petitioner with respect to the Vedanthangal lake/Bird Sanctuary are not based on the facts". Committee is of the opinion that that there is no impact of industry operation on the Vedanthangal lake/Bird Sanctuary and no likely threat to the migratory birds.

7.4 Study to assess the presence of industrial pollutants in water, soil and sediment:

(i) **Impact of industrial effluent on quality of surface water and sediment of Vedanthangal lake located within the Bird Sanctuary:** The analysis of surface water and sediment collected from the Vedanthangal lake shows that there is no specific impact from the industrial effluent. Copper and Chromium concentration were negative and observed in below detectable limit. The common Volatile Organic Compounds (VOCs) from the industrial activity namely benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene were found in below detectable level in surface water and sediment of the lake.

(ii) **Impact of industrial effluent on quality of surface water and sediment of nearby water bodies:**

The analysis of surface water and sediment collected from the water bodies namely Puthupethangal Eri, Hanumankuppam pond, Maduranthagam Eri and Puthupet village (open well) shows that there is no specific impact from the industrial effluent. Copper and Chromium concentration were negative and observed in below detectable limit. The common VOCs from the industrial activity namely benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene were found in below detectable level in surface water and sediment of the above water bodies. Committee noted that these water bodies are located downstream of Vedanthangal lake and there is no chance that the water from these water bodies gets into Vedanthangal lake/Bird Sanctuary.

(iii) **Impact of industrial effluent on ground water quality:**

Ground water samples were collected from nine locations in and around the industry. (Four from the monitoring wells located within the industry site and three from downstream locations and two from the upstream locations of the industry). The samples were tested for Phenolic compound (C₆H₅OH), Total Suspended Solids (TSS), Hexavalent Chromium (Cr⁶⁺) Chromium (Cr), Copper (Cu) and Volatile Organic Compounds (VOCs), in addition other chemical parameters.

For SUN PHARMACEUTICAL INDUSTRIES LTD



M.A. JOY
General Manager - Operations

ENVIRONMENT AND FORESTS DEPARTMENTAPPENDIXNOTIFICATION

WHEREAS the area specified in the schedule below is not an
comprised within the forest of the territorial matters.

AND WHEREAS the Government of Tamil Nadu considered that the
specified in the schedule below is of adequate ecological and
significance for the purpose of protecting birds and their
conservation.

AND WHEREAS in the Notification issued under sub section (1)
section 18 of the Wildlife (Protection) Act, 1972 (Central Act
1972), the Government of Tamil Nadu declared the intention
to constitute the area specified in the schedule to be a Sanctuary
called the Vedanthangal Lake Birds Sanctuary and the same has been
published in the Environment and Forests (FR.V) Department.
Notification No.II(2)/EF/790/96, at page 218 of Part-II Section-2
of the Tamil Nadu Government Gazette, dated the 3rd April, 1996.

AND WHEREAS, the Collector, Kancheepuran District have
published a proclamation under Section 21 of the said Act, in and
around the village and in the Government Offices of the area
comprised therein requiring any person, claiming any right mentioned
Section 19 of the said Act within two months from the date of
proclamation and preferred within the time specified above.

NOW, THEREFORE, in exercise of the powers conferred by
sub section (1) of section 26-A of the Wildlife (Protection)
Act, 1972. (Central Act 53 of 1972), the Governor of Tamil Nadu
hereby declares that the area specified in the schedule below
shall be a sanctuary called the 'Vedanthangal Lake Birds Sanctuary'
with effect from and from the date of publication of this

For SUN PHARMACEUTICAL INDUSTRIES



M.A. JOY
General Manager - Operations

THE SCHEDULE

- (1) Name of the district : Kancheepuram
(2) Name of the forest division : Chengalpattu
(3) Name of the Taluk : Madurantagam
(4) Number and Name of the village : 27, Vedanthangal
(5) S.F. Number : 220
(6) Name of the sanctuary : Vedanthangal Lake Birds Sanctuary
(7) Area of the sanctuary : 73.06 acres or 29.51.6 Hectares and surroundings five kilometres around the lake.

BOUNDARIES

North:- It starts from the trifunction of S.F.No.215, 213 and 220 of Vedanthangal Village.. Thence it runs towards east along the northern boundary of SF Nos.213,234,232,231, 228, 229 and 271.

East :- Thence it runs towards the south along the eastern boundary of S.F.Nos.274, 277 and 225.

South :- Thence it runs north-west along the southern boundary of S.F.Nos.138, 152, 153 and 178 western boundary of S.F.Nos.184 and 218.

West :- Thence it runs towards north along the western boundary of S.F.Nos.214 and 215 until it meets the starting point.

K.S. SRIPATHI
SECRETARY TO GOVERNMENT

/ True Copy /

For SUN PHARMACEUTICAL INDUSTRIES LTD.

M.A. JOY
General Manager - Operations

4. The Notification appended in this Order shall be published both in English and in Tamil in the next issue of Tamil Nadu Government Gazette and in Tamil in the District Gazette of Kancheepuram District.

5. The Tamil Development and Culture Department is requested to send immediately a Tamil translation of the Notification to the Works Manager, Government Central Press, Chennai for publication in the Tamil Nadu Government Gazette and in the District Gazette of Kancheepuram District.

6. The Works Manager, Government Central Press, Chennai is requested to send twenty copies of each (in English and in Tamil) of the Notifications to the Principal Chief Conservator of Forests, Chennai-15, Chief Conservator of Forests (Wildlife, and Chief Wildlife Warden, Chennai-15, Government in Environment and Forests Department and to the Collector of Kancheepuram District, as soon as the Notification is published.

(BY ORDER OF THE GOVERNOR)

K.S. SRIPATHI
SECRETARY TO GOVERNMENT

The Works Manager, Government Central Press, Chennai-79.
The Director of Stationery and Printing, Chennai-2.
The Principal Chief Conservator of Forests, Chennai-15.
The Chief Wildlife Warden, Chennai-15.
The Collector of Kancheepuram District.
The Tamil Development and Culture Department, Chennai-9.

Copy to:

The Senior PA to the Hon'ble Minister (Forests & Printing), Chennai-9.
The Secretary to Government of India, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, Lodi Road, New Delhi-5.
The Law Department, Chennai-9.
The Revenue Department, Chennai-9.
The Senior Personal Assistant to the Hon'ble Minister for Revenue, Chennai-9.
The Senior personal Assistant to the Hon'ble Minister for Public Works, Chennai-9.

FORWARDED/BY ORDER

SECTION OFFICER

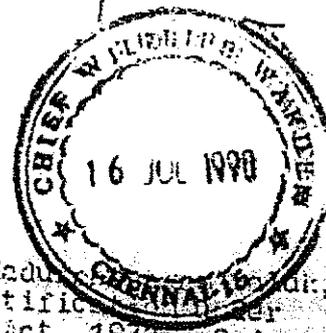
For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY

General Manager-Operations

GOVERNMENT OF TAMIL NADU

ABSTRACT



Forests - Declaration of Vedanthangal Lake, Maduranthagan Taluk, Kancheepuram District as Birds Sanctuary - Notification under Section 26 A(i) of the wildlife (Protection) Act, 1972 - Orders-Issued.

ENVIRONMENT AND FORESTS (FR.V(1)) DEPARTMENT

G.O.Ms.No.199

Dated: 3.7.1998.

Read :

1. G.O.Ms.No.67, Environment and Forests Department, dated 13.3.96.
2. From the Collector, Kancheepuram District Lr.No.153613/91 FSO, dated 21.5.97.
3. From the Chief Conservator of Forests (Wildlife) and Chief Wildlife No.3137/91 D, dated 5.6.97.

ORDER :

In its orders first read above, the Government have notified its intention to constitute the lake area measuring an extent of 73.06 acres in S.No.220 5 kms. surrounding the lake in Vedanthangal Village, Maduranthagan Taluk, Kancheepuram District, as a Birds Sanctuary under Section 19 (1) of the wildlife (Protection) Act, 1972. The notification was published in the Tamil Nadu Government Gazette No.13, Part-II Section 2, dated 3.4.1996 in English and in the District Gazette July 1996 of Kancheepuram District, in Tamil Nadu.

2. After observing the due formalities prescribed in Sections 19-25 of the wildlife (Protection) Act, 1972, the Collector of Kancheepuram District and the Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden in their letters second and third read above respectively have stated that no claims and objection have been received for the constitution of the said area as Birds Sanctuary and that the final notifications may be issued under Section 26 (A)(i) of the Wildlife (Protection) Act, 1972 for declaring the said area as a Birds Sanctuary.

3. The Government, after careful consideration, accept the proposals of the Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden sent in his letter ~~second~~ read above and direct that the lake area in S.No.220 measuring an extent of 73.06 acre and 5 kms. surrounding the said lake in Vedanthangal Village, Maduranthagan Taluk, Kancheepuram District, by reason of the ecological, fauna, flora, geomorphological and zoological associations and importance, be constituted as a Birds Sanctuary for the purpose of protection, propagation and development of wildlife and its environment under Section 26 A(i) of the Wildlife (Protection) Act, 1972.

For SUN PHARMACEUTICAL INDUSTRIES LTD.

p. t. o.

M.A. JOY
General Manager-Operations

7. CONCLUSION AND RECOMMENDATIONS

7.1 Necessary clearances and consent and other permission:

The Sun Pharma started its production before 1994. As per the EIA Notification, 1994, exemption from obtaining Environmental Clearance, was granted to projects that were already initiated before 1994. The Sun Pharma is operating its unit based on Consents were issued in 2005, 2006 and 2020 by the SPCB and also based on the findings of the Anna University study that the waste generated by the products / process of the Sun Pharma are less than the permitted amount of waste generation. **In view of the above, it is observed that requirement of Environmental Clearance was not applicable for the existing operation.** But, for the proposed production of the bulk drug intermediates, Environmental Clearance is required under the current EIA 2006 and draft EIA 2020.

7.2 Pollution Control Mechanism:

The industry is segregating low & high TDS effluent and treating them separately. The reject from low TDS treatment system is sent to MEE & treated along with High TDS effluent. The concentrate from MEE is sent to ATFD to achieve ZLD. The domestic waste water generated in the plant is treated in Sewage Treatment Plant. The treated domestic waste water is utilised for gardening.

It is observed that Solvent Recovery System is not working with high efficiency, because of that the solvent along with the effluent is sent to MEE system where the solvent is collected separately and sent to recycler. The industry shall take necessary steps to optimise the operational efficiency of the Solvent Recovery System.

In addition to the existing RO system, the industry shall install High pressure RO or any other suitable technology to increase more recycling of treated wastewater which will also reduce further steam consumption of MEE due to increase in concentration of reject.

7.3 Impact on Vedanthangal Bird Sanctuary (Based on the facts submitted by Tamil Nadu Forest Department - ANNEXURE-15):

"The petitioner submits to Hon'ble NGT in the Para 10 of the OA 88/2020 that M/s Sun Pharmaceuticals Pvt Ltd is close to the core zone of the Vedanthangal Bird Sanctuary".

"There is no core zone and buffer zone demarcations in the Vedanthangal Sanctuary Notification vide G.O.Ms.No.199, E&F Dept dated 03-07-1999. Sanctuary notification includes the water body/lake with 29.5 ha area and surrounding 5 km area (private land holdings, villages, town with intense human activity). The Sun Pharma is located at a

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager - Operations

distance of 3.7 kms from the sanctuary lake and is within the limits of 5 kms zone notified Sanctuary".

"Vedanthangal Lake is home to many nesting and roosting aquatic birds which are both local and distant migrant birds. Prime nesting species are Open Bill Stork, Grey Pelican, Painted Stork, White Ibis, Cormorants, Darter, Grey Heron, Large Egret, Spoonbill, Garganey Spot-billed Duck, etc".

"As observed by the staff in Vedanthangal Bird Sanctuary, nesting and roosting birds arrival to the Vedanthangal Lake depends on the water level in the lake and the feed availability. It is noted from the decadal bird data that, during a good monsoon year about 30000 birds arrive to the Sanctuary from September to December and about 70000-80000 birds (including young ones) return back between Jan-May. If the rainfall is low, only about 1000-3000 birds arrival is noted in the Sanctuary and if rainfall is moderate, about 15-20000 birds arrival is noted in the Sanctuary. Sufficient water availability in the lake also indicates good feed availability. To supplement the feed, Forest Department also releases fingerlings into the lake every year".

"In Para 13 of the OA 88/2020, the petitioner submits that the Sun Pharma discharges the trade and hazardous effluents to the near-by water bodies surrounding Vedanthangal lake. Birds use the surrounding water bodies and surrounding land area for nesting and foraging. The effluents which are discharged into the surrounding water bodies and land are threat to the birds of Vedanthangal".

"Vedanthangal Bird Sanctuary is known for congregation of about 30-40000 birds during a good monsoon year and these are aquatic birds. Vedanthangal aquatic birds do not nest outside the lake and they nest only inside water body/lake. Other local land bird's nesting may be noted in the surrounding area. And, with respect to the point that hazardous effluents discharged by Sun Pharma to the surrounding lakes are threat to the birds, it is noted that, Vedanthangal is a centuries old Aquatic Birds nesting area and every year, migratory birds come to the lake. Nesting is noted based on monsoon dynamics. It is observed that, nesting birds usually leave the nest in the morning and return back by evening. They go to farther locations mostly and few bird species prefer surrounding 1 or 2 km area. So far, no casualty of Vedanthangal birds is noted due to any consumption of water or feed from surrounding water bodies or field area. Further, Sun Pharma is functioning in the location even before the Bird Sanctuary was declared in 1998".

"In para 14 of the OA, the petitioner submits to the Hon'ble NGT that Sun Pharma is close to water bodies like Sitheri, Puthupet thangal and Maduranthagam lake. And the above said water bodies join the Vedanthangal lake after catering to the needs of the agriculturists and villages. There is enormous pollution in these water bodies due to effluent discharge by the Sun Pharma".

For SUN PHARMACEUTICAL INDUSTRIES LTD.


M.A. JOY
General Manager - Operations

"Vedanthangal lake is on the upstream side of Pathupet lake, Sitheri pond and Maduranthagam is the largest lake/water body into which most of the smaller water bodies drain during the good monsoon. Further, water in Maduranthagam drains towards eastern part and there is no chance that the water from these water bodies gets into Vedanthangal lake/Bird Sanctuary."

"Based on the facts and details mentioned above, it is concluded that, the submissions made in Para 10, 13 and 14 in the OA No.88/2020 by the petitioner with respect to the Vedanthangal lake/Bird Sanctuary are not based on the facts". Committee is of the opinion that that there is no impact of industry operation on the Vedanthangal lake/Bird Sanctuary and no likely threat to the migratory birds.

7.4 Study to assess the presence of industrial pollutants in water, soil and sediment:

(i) **Impact of industrial effluent on quality of surface water and sediment of Vedanthangal lake located within the Bird Sanctuary:** The analysis of surface water and sediment collected from the Vedanthangal lake shows that there is no specific impact from the industrial effluent. Copper and Chromium concentration were negative and observed in below detectable limit. The common Volatile Organic Compounds (VOCs) from the industrial activity namely benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene were found in below detectable level in surface water and sediment of the lake.

(ii) **Impact of industrial effluent on quality of surface water and sediment of nearby water bodies:**

The analysis of surface water and sediment collected from the water bodies namely Puthupethangal Eri, Hanumankuppam pond, Maduranthagam Eri and Puthupet village (open well) shows that there is no specific impact from the industrial effluent. Copper and Chromium concentration were negative and observed in below detectable limit. The common VOCs from the industrial activity namely benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene were found in below detectable level in surface water and sediment of the above water bodies. Committee noted that these water bodies are located downstream of Vedanthangal lake and there is no chance that the water from these water bodies gets into Vedanthangal lake/Bird Sanctuary.

(iii) **Impact of industrial effluent on ground water quality:**

Ground water samples were collected from nine locations in and around the industry. (Four from the monitoring wells located within the industry site and three from downstream locations and two from the upstream locations of the industry). The samples were tested for Phenolic compound (C₆H₅OH), Total Suspended Solids (TSS), Hexavalent Chromium (Cr⁶⁺), Chromium (Cr), Copper (Cu) and Volatile Organic Compounds (VOCs), in addition other chemical parameters.

For SUN PHARMACEUTICAL INDUSTRIES LTD.


M.A. JOY
General Manager - Operations

4.2. Committee's observation:

From the above facts, it is observed that the unit started its production before 1994 and Consent was obtained from the respective State Pollution Control Board (SPCB) in 1992. As per the EIA Notification, 1994, exemption from obtaining EC, was granted to projects that were already initiated before 1994 (ANNEXURE-10). The Sun Pharma is operating its unit based on Consents were issued in 2005, 2006 and 2020 by the SPCB and also based on the findings of the Anna University study that the waste generated by the products / process of the Sun Pharma are less than the permitted amount of waste generation. EC requirement was not applicable for the existing operation. But, for the proposed production of the bulk drug intermediates, EC is required under the current EIA 2006 and draft EIA 2020.

The unit, in May, 2020 has applied for EC for the "Proposed Change in Product Mix and Enhancement of production capacity within the existing facility". The unit has proposed for production of bulk drug intermediates of 38.11 MTPM and also proposed for new addition and enhancement of existing capacity to 75.82 MTPM. The existing production capacity of the unit is 25.5 MTPM.

5. POLLUTION CONTROL MECHANISM

The industry has separate Effluent Treatment Plant (ETP) and Sewage Treatment Plant (STP). Generated waste water is treated in Zero Liquid Discharge system [Multi Effect Evaporation (MEE) and Agitated Thin Film Dryer (ATED)]. Effluents send to ETP followed by RO. RO permeate reuse for utilities & others & RO rejects sent to MEE Plant & MEE rejects send to ATFD.

Effluent Treatment Plant (ETP): The effluent generated from manufacturing plant is collected and treated through ETP (The details of ETP Components and Specification details are given at ANNEXURE-11). Sewage is treated by STP. 34.5 KLD of effluent is generated by the unit which is treated by ETP and 22.5 KLD of sewage is generated and treated by STP. Treated water sent to greenbelt.

Hazardous Wastes: The industry has submitted a copy of Annual Return (Form -IV) of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 submitted to SPCB, for the year April 2018 to March 2019 and April 2019 to March 2020 (ANNEXURE -12). The industry generated hazardous waste viz., (i) Spent Nickel (1.5 tons) (ii) Spent Carbon (4.29 tons) (iii) Spent Organic Solvents (239 tons) (iv) Spent Oil (1.5 tons) and Discarded Barrels/ Containers used for handling hazardous wastes/chemicals (1492) and Chemical Sludge from waste water treatment (629.43) for the year April 2019 to March 2020.

The hazardous waste generated for the year April 2018 - March 19 are (i) Spent Nickel (1.5 tons) (ii) Spent Carbon (4.29 tons) (iii) Spent Organic Solvents (240 tons) (iv) Spent Oil (1.5 tons) and Discarded Barrels/ Containers used for handling hazardous

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager - Operations

wastes/chemicals -HDPE drums (1492) and Chemical Sludge from waste water treatment (731.19)

The hazardous wastes that are generated are sent to authorised TSDF Facilitators /Recyclers as per the details given below:

Hazardous waste/category as per HW Rules 2016	Authorised TSDF/Recyclers
Spent Oil (Category: 5.1)	Sri Chementor Pvt Ltd. Perumbakkam Village, Vanur Taluk, Vilupuram, Tamil Nadu
Spent Catalyst (Nickel) (Category: 28.2)	M/s Roddhi Siddhi Steels and alloys, Nagpur, Maharashtra
Spent Carbon (Category: 28.3) and Chemical sludge (Category: 35.3)	-Tamil Nadu Waste Management Ltd, Gummidipoondi, Tamil Nadu -GE Eco Services, Kadappa District, Andhra Pradesh
Spent solvent (Category: 28.6)	-Sri Chementor Pvt Ltd. Perumbakkam Village, Vanur Taluk, Vilupuram, Tamil Nadu - M/s Pentakcoat resins, Kondalankuppam Village, Vanur Taluk, Vilupuram, Tamil Nadu -OZPEC Chemical Industries Pvt Ltd Coimbatore Dist, Tamil Nadu
Discarded Barrels, Liners and fibre drums (Category: 33.1)	M/s Dhanasekaran Nadar Traders Unit-II Kancheepuram Dist, Tamil Nadu

Municipal Solid Waste: Solid Wastes generated from canteen is being utilised as manure within the premises.

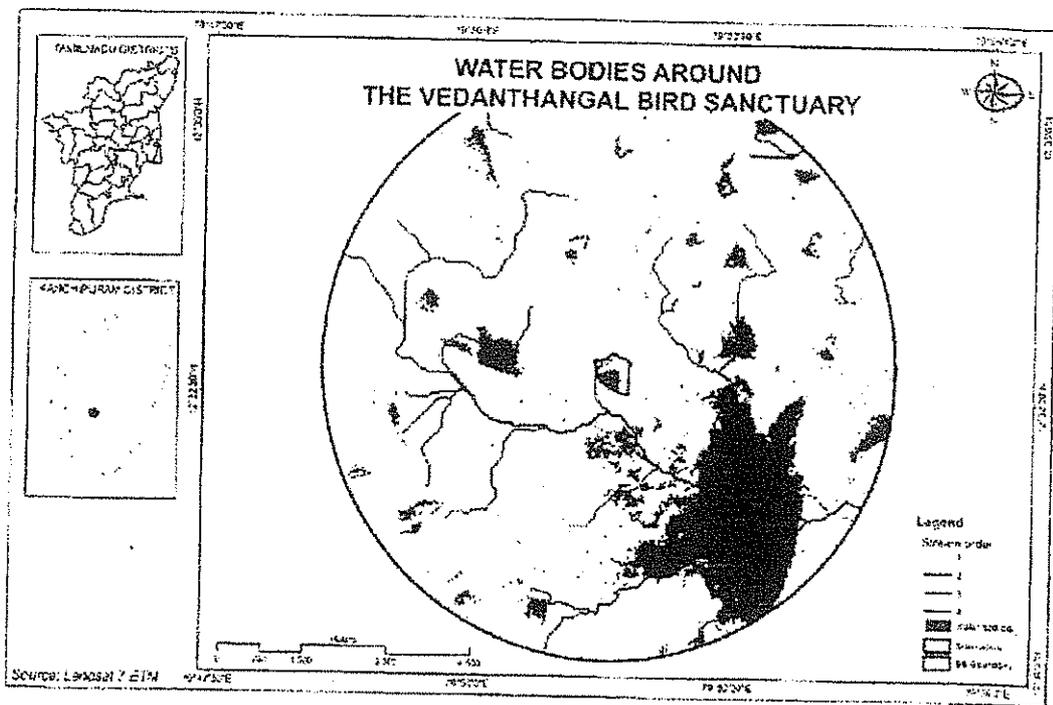
Water Supply: As per the information provided to the committee, the industry has got agreement with external agency, M/s Lakshmi Waters, Mamandoor (Chengalpattu) for raw water supply for operation of the unit.

Water Balance Sheet: The industry submitted the water balance sheet stating the quantity of water used in the different processes, wastewater generation, sludge generation during the treatment, quantity of wastewater passed through RO system, quantity permeate and rejects, quantity of water recycled into the processes and the quantity of treated wastewater discharged (ANNEXURE -13).

Leak Detection and Repair (LDAR) programme: As per the document produced to the Committee, a leak Detection and Repair (LDAR) programme was implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. This study was conducted by Glens Innovation Labs Pvt Ltd, Chennai. The study concluded that the Sun Pharma has a yearly emission of VOC was 36.20 kg/year/ and

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager - Operations



Map showing Vedanthangal Lake /Bird Sanctuary on upstream side (marked in red) of Mathuranthangam lake (largest), Puthupet lake (above Mathurangam lake) on the downstream side.

Based all on the facts and details mentioned above, it is concluded that, the submissions made in Para 10, 13 and 14 in the O.A No.88/2020 by the petitioner with respect to the Vedanthangal Lake/ Bird Sanctuary are not based on the facts.

This is for favour of kind information.

Yours faithfully,
Sd//C.H.Padma, IFS
Wildlife Warden
Chennai Wildlife Division

Copy Submitted to the Principal Chief Conservator of Forests & Chief Wildlife Warden for favour of kind information.

Copy Submitted to the Additional Principal Chief Conservator of Forests & Director, Arignar Anna Zoological Park, Vandalur for favour of kind information.

// True copy / by order //

Superintendent
[Signature]
20/11/20

[Signature]
20/11/20

For SUN PHARMACEUTICAL INDUSTRIES LTD

[Signature]
M.A. JOY
General Manager - Operations

"Vedanthangal lake is on the upstream side of Puthupet lake, Sitheri pond and Maduranthagam is the largest lake/water body into which most of the smaller water bodies drain during the good monsoon. Further, water in Maduranthagam drains towards eastern part and there is no chance that the water from these water bodies gets into Vedanthangal lake/Bird Sanctuary."

"Based on the facts and details mentioned above, it is concluded that, the submissions made in Para 10, 13 and 14 in the OA No.88/2020 by the petitioner with respect to the Vedanthangal lake/Bird Sanctuary are not based on the facts". Committee is of the opinion that that there is no impact of industry operation on the Vedanthangal lake/Bird Sanctuary and no likely threat to the migratory birds.

7.4 Study to assess the presence of industrial pollutants in water, soil and sediment:

(i) **Impact of industrial effluent on quality of surface water and sediment of Vedanthangal lake located within the Bird Sanctuary:** The analysis of surface water and sediment collected from the Vedanthangal lake shows that there is no specific impact from the industrial effluent. Copper and Chromium concentration were negative and observed in below detectable limit. The common Volatile Organic Compounds (VOCs) from the industrial activity namely benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene were found in below detectable level in surface water and sediment of the lake.

(ii) **Impact of industrial effluent on quality of surface water and sediment of nearby water bodies:**

The analysis of surface water and sediment collected from the water bodies namely Pudhupethangal Eri, Hanumankuppam pond, Maduranthagam Eri and Puthupet village (open well) shows that there is no specific impact from the industrial effluent. Copper and Chromium concentration were negative and observed in below detectable limit. The common VOCs from the industrial activity namely benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene were found in below detectable level in surface water and sediment of the above water bodies. Committee noted that these water bodies are located downstream of Vedanthangal lake and there is no chance that the water from these water bodies gets into Vedanthangal lake/Bird Sanctuary.

(iii) **Impact of industrial effluent on ground water quality:**

Ground water samples were collected from nine locations in and around the industry. (Four from the monitoring wells located within the industry site and three from downstream locations and two from the upstream locations of the industry). The samples were tested for Phenolic compound (C_6H_5OH), Total Suspended Solids (TSS), Hexavalent Chromium (Cr^{6+}), Chromium (Cr), Copper (Cu) and Volatile Organic Compounds (VOCs), in addition other chemical parameters.

For SUN PHARMACEUTICAL INDUSTRIES LTD


M.A. JOY
General Manager - Operations

wastes/chemicals -HDPE drums (1492) and Chemical Sludge from waste water treatment (731.19)

The hazardous wastes that are generated are sent to authorised TSDF Facilitators /Recyclers as per the details given below:

Hazardous waste/category as per HW Rules 2016	Authorised TSDF/Recyclers
Spent Oil (Category: 5.1)	Sri Chementor Pvt Ltd. Perumbakkam Village, Vanur Taluk, Vilupuram, Tamil Nadu
Spent Catalyst (Nickel) (Category: 28.2)	M/s Roddhi Siddhi Steels and alloys, Nagpur, Maharashtra
Spent Carbon (Category: 28.3) and Chemical sludge (Category: 35.3)	-Tamil Nadu Waste Management Ltd, Gummidipoondi, Tamil Nadu -GE Eco Services, Kadappa District, Andhra Pradesh
Spent solvent (Category: 28.6)	-Sri Chementor Pvt Ltd. Perumbakkam Village, Vanur Taluk, Vilupuram, Tamil Nadu - M/s Pentakcoat resins, Kondalankuppam Village, Vanur Taluk, Vilupuram, Tamil Nadu -OZPEC Chemical Industries Pvt Ltd Coimbatore Dist, Tamil Nadu
Discarded Barrels, Liners and fibre drums (Category: 33.1)	M/s Dhanasekaran Nadar Traders Unit-II Kancheepuram Dist, Tamil Nadu

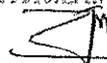
Municipal Solid Waste: Solid Wastes generated from canteen is being utilised as manure within the premises.

Water Supply: As per the information provided to the committee, the industry has got agreement with external agency, M/s Lakshmi Waters, Mamandoor (Chengalpattu) for raw water supply for operation of the unit.

Water Balance Sheet: The industry submitted the water balance sheet stating the quantity of water used in the different processes, wastewater generation, sludge generation during the treatment, quantity of wastewater passed through RO system, quantity permeate and rejects, quantity of water recycled into the processes and the quantity of treated wastewater discharged (ANNEXURE -13).

Leak Detection and Repair (LDAR) programme: As per the document produced to the Committee, a leak Detection and Repair (LDAR) programme was implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. This study was conducted by Glens Innovation Labs Pvt Ltd, Chennai. The study concluded that the Sun Pharma has a yearly emission of VOC was 36.20 kg/year/ and

For SUN PHARMACEUTICAL INDUSTRIES LTD.



M.A. JOY

General Manager - Operations



Map showing Industry location, Vedanthagal Bird Sanctuary and Maduranthagam Lake

4. NECESSARY CLEARANCES AND CONSENT AND OTHER PERMISSION:

The Sun Pharma an existing pharmaceutical industry was established in the year 1992-93 located at Survey No. 90/2, 90/3, 90/4, 99/1, 99/2, 99/3, 99/4, 99/5, 100/1, 100/2A, 100/2B, 100/3, in Sathammai Village, Karunkuzhi Post, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu. Total land area is 17.27 acres with 31.47% of greenbelt along the periphery and other areas. From the industry, the Vedanthagal Bird Sanctuary is located at 3.72 Km of west. The important water bodies like Maduranthagamlake is located south west of the industry (Maduranthagam Tank: 1.13 km SW Direction; Maduranthagam High Level Channel: 4.93 km SSW Direction)

4.1. Consent under Air and Water Acts:

Consent issued in 1992: As per the documents submitted to the Committee, initially, Consent was issued to the M/s Pradeep Exports (A unit of Pradeep drug Company Ltd), Sathammai Village (Maduranthagam Taluk) vide Consent Order No.8850 dated 9-4-1992 under the Water Act, 1974 with validity up to 31-03-1993 and thereafter modification issued on 5-6-1992. The company was later merged with/converted into M/s Sun Pharma Industries Ltd. (Copy of Consent given at ANNEXURE -3).

Environmental viability study: A study was conducted in June 2005 by the Anna University, Chennai to assess the environmental viability for the additional products/processes of Sun Pharma (A copy of the report is at ANNEXURE-4)

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY
General Manager - Operations

4.2. Committee's observation:

From the above facts, it is observed that the unit started its production before 1994 and Consent was obtained from the respective State Pollution Control Board (SPCB) in 1992. As per the EIA Notification, 1994, exemption from obtaining EC, was granted to projects that were already initiated before 1994 (ANNEXURE-10). The Sun Pharma is operating its unit based on Consents were issued in 2005, 2006 and 2020 by the SPCB and also based on the findings of the Anna University study that the waste generated by the products / process of the Sun Pharma are less than the permitted amount of waste generation. EC requirement was not applicable for the existing operation. But, for the proposed production of the bulk drug intermediates, EC is required under the current EIA 2006 and draft EIA 2020.

The unit, in May, 2020 has applied for EC for the "Proposed Change in Product Mix and Enhancement of production capacity within the existing facility". The unit has proposed for production of bulk drug intermediates of 38.11 MTPM and also proposed for new addition and enhancement of existing capacity to 75.82 MTPM. The existing production capacity of the unit is 25.5 MTPM.

5. POLLUTION CONTROL MECHANISM

The industry has separate Effluent Treatment Plant (ETP) and Sewage Treatment Plant (STP). Generated waste water is treated in Zero Liquid Discharge system [Multi Effect Evaporation (MEE) and Agitated Thin Film Dryer (ATED)]. Effluents send to ETP followed by RO. RO permeate reuse for utilities & others & RO rejects sent to MEE Plant & MEE rejects send to ATFD.

Effluent Treatment Plant (ETP): The effluent generated from manufacturing plant is collected and treated through ETP (The details of ETP Components and Specification details are given at ANNEXURE-11). Sewage is treated by STP. 34.5 KLD of effluent is generated by the unit which is treated by ETP and 22.5 KLD of sewage is generated and treated by STP. Treated water sent to greenbelt.

Hazardous Wastes: The industry has submitted a copy of Annual Return (Form -IV) of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 submitted to SPCB, for the year April 2018 to March 2019 and April 2019 to March 2020 (ANNEXURE -12). The industry generated hazardous waste viz., (i) Spent Nickel (1.5 tons) (ii) Spent Carbon (4.29 tons) (iii) Spent Organic Solvents (239 tons) (iv) Spent Oil (1.5 tons) and Discarded Barrels/ Containers used for handling hazardous wastes/chemicals (1492) and Chemical Sludge from waste water treatment (629.43) for the year April 2019 to March 2020.

The hazardous waste generated for the year April 2018 - March 19 are (i) Spent Nickel (1.5 tons) (ii) Spent Carbon (4.29 tons) (iii) Spent Organic Solvents (240 tons) (iv) Spent Oil (1.5 tons) and Discarded Barrels/ Containers used for handling hazardous

For SUN PHARMACEUTICAL INDUSTRIES LTD



M.A. JOY
General Manager - Operations

wastes/chemicals -HDPE drums (1492) and Chemical Sludge from waste water treatment (731.19)

The hazardous wastes that are generated are sent to authorised TSDF Facilitators /Recyclers as per the details given below:

Hazardous waste/category as per HW Rules 2016	Authorised TSDF/Recyclers
Spent Oil (Category: 5.1)	Sri Chementor Pvt Ltd. Perumbakkam Village, Vanur Taluk, Vilupuram, Tamil Nadu
Spent Catalyst (Nickel) (Category: 28.2)	M/s Roddhi Siddhi Steels and alloys, Nagpur, Maharashtra
Spent Carbon (Category: 28.3) and Chemical sludge (Category: 35.3)	-Tamil Nadu Waste Management Ltd, Gummidipoondi, Tamil Nadu -GE Eco Services, Kadappa District, Andhra Pradesh
Spent solvent (Category: 28.6)	-Sri Chementor Pvt Ltd. Perumbakkam Village, Vanur Taluk, Vilupuram, Tamil Nadu - M/s Pentakcoat resins, Kondalankuppam Village, Vanur Taluk, Vilupuram, Tamil Nadu -OZPEC Chemical Industries Pvt Ltd Coimbatore Dist, Tamil Nadu
Discarded Barrels, Liners and fibre drums (Category: 33.1)	M/s Dhanasekaran Nadar Traders Unit-II Kancheepuram Dist, Tamil Nadu

Municipal Solid Waste: Solid Wastes generated from canteen is being utilised as manure within the premises.

Water Supply: As per the information provided to the committee, the industry has got agreement with external agency, M/s Lakshmi Waters, Mamandoor (Chengalpattu) for raw water supply for operation of the unit.

Water Balance Sheet: The industry submitted the water balance sheet stating the quantity of water used in the different processes, wastewater generation, sludge generation during the treatment, quantity of wastewater passed through RO system, quantity permeate and rejects, quantity of water recycled into the processes and the quantity of treated wastewater discharged (ANNEXURE -13).

Leak Detection and Repair (LDAR) programme: As per the document produced to the Committee, a leak Detection and Repair (LDAR) programme was implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. This study was conducted by Glens Innovation Labs Pvt Ltd, Chennai. The study concluded that the Sun Pharma has a yearly emission of VOC was 36.20 kg/year/ and

For SUN PHARMACEUTICAL INDUSTRIES LTD

M.A. JOY

General Manager - Operations

50.	t-BUTYLBENZENE,		BDL	BDL	BDL	BDL
51.	n-BUTYLBENZENE,		BDL	BDL	BDL	BDL
52.	1,2-DICHLOROBENZENE,		BDL	BDL	BDL	BDL
53.	1,2,4-TRICHLOROBENZENE,		BDL	BDL	BDL	BDL
54.	HEXACHLORO-1,3-BUTADIENE		BDL	BDL	BDL	BDL

BDL: Below Detection Limit; Limit of Quantification: 10.0 µg/L

6.3 Committee's Observation:

(i) Impact of industrial effluent on quality of surface water and sediment of Vedanthangal lake located within the Bird Sanctuary:

The analysis of surface water and sediment collected from the Vedanthangal lake shows that **there is no specific impact from the industrial effluent**. Copper and Chromium concentration were negative and observed in below detectable limit. The common Volatile Organic Compounds (VOCs) from the industrial activity namely benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene were found in below detectable level in surface water and sediment of the lake.

As per the information provided by the Tamil Nadu Forest Department, "migratory birds visit to the lake every year and nesting is noted based on monsoon dynamics. Nesting birds usually leave the nest in the morning and return back by evening, they go to farther locations mostly and few bird species prefer surrounding 1 or 2 km area. so far, **no casualty of Vedanthangal birds is noted due to any consumption of water or feed from surrounding water bodies or field area**".

Based on the analysis of water and sediment samples and above facts given by the Tamil Nadu Forest Department, the committee is of the opinion that there may be no impact of industrial pollutants to the lake by the industry and no likely threat to the migratory birds of Vedanthagal Bird Sanctuary.

(ii) Impact of industrial effluent on quality of surface water and sediment of water bodies (Pudhupethangal Eri, Hanumankuppam pond, Maduranthangam Eri and Pudhupet village - open well)

The analysis of surface water and sediment collected from the water bodies namely Pudhupethangal Eri, Hanumankuppam pond, Maduranthangam Eri and Pudhupet village (open well) shows that **there is no specific impact from the industrial effluent**. Copper and Chromium concentration were negative and observed in below detectable limit. The common VOCs from the industrial activity namely benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene were found in below detectable level in surface water and sediment of the above water bodies. Committee noted that these water bodies are located downstream of Vedanthangal lake and there is no chance that the water from these water bodies gets into Vedanthangal lake/Bird Sanctuary.

(iii) Impact of industrial effluent on ground water quality:

For SUN PHARMACEUTICAL INDUSTRIES LTD



M.A. JOY
General Manager - Operations