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REPORT OF THE JOINT COMMITTEE AS PER ORDER DATED 21.01.2021 & 03.02.2021 IN THE MATTER OF OA NO. 186/2020

SUBMITTED TO

HON'BLE NATIONAL GREEN TRIBUNAL
SOUTHERN BENCH
CHENNAI

APRIL, 2021

BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI
Original Application No. 186 of 2020 (SZ)

IN THE MATTER OF:

Tribunal on its own motion - SUO MOTU Based on the News item in The New Sunday Express Newspaper Dated: 20.07.2020, "Ranipet Residents health at risk due to Pollution; Chromium waste killing agriculture in Ranipet Poses long-term health risks."

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Place: Chennai
Date: 16.04.2021

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Report of the Joint Committee in the matter of OA No. 186/2020

(As per Hon'ble National Green Tribunal, Southern Zone, Chennai Order dated 21.01.2021 & 03.02.2021)

1. Background

The Hon'ble National Green Tribunal, Southern Zone, Chennai has taken Suo Motu case on the basis of the newspaper report published in "The New Sunday Express Newspaper Edition dated: 20.07.2020 under the captions "Ranipet residents health at risk due to pollution; Chromium waste killing agriculture in Ranipet, poses long-term health risks". In the matter of OA no. 186 of 2020 constituted a committee and directed that;

".....9. In order to ascertain the present state of affairs and also the remedial measures to be taken for the purpose of rectifying this hazard in a permanent manner, we feel it appropriate to appoint a joint committee comprising of 1) a Senior Scientist from Ministry of Environment, Forest and Climate Change (MoEF&CC), Regional office, Chennai 2) a Senior Scientist from Central Pollution Control Board, Regional Office, Chennai 3) a Superintending Engineer from Public Works Department and Water Resources Organisation 4) a Chief Engineer or a Senior Officer deputed from the Office of the State Ground and Surface Water Resources Data Centre, Chennai 5) the District Collector, Ranipet District, or a Senior Officer not below the rank of Assistant Collector or Sub Divisional Magistrate deputed by the District Collector 6) a Senior Officer from the State Industries Department and 7) a Senior officer from Tamil Nadu State Pollution Control Board as deputed by the Chairman, Tamil Nadu State Pollution Control as designated by its Chairman to inspect the area in question and submit a factual as well as action taken report, if there is any violation found.

10. The committee is directed to go into the question regarding the source of pollution and the ground water quality in that area and what are all the remedial measures already taken in view of the directions given by the Hon'ble Apex Court in Vellore Citizens Case (Welfare Forum Vs Union of India and others (1996) 5 SCC 647) disposal of hazardous substance generated by the industries and its violation the nature of violation taken by the regulating authorities against the person who are committing such repeated violations, action plan that has been prepared and its stage of implementation and its result and whether any alternate provision has been made for providing clean potable water to the locality of the people, if it is infected Chromium and Lead and submit a report including assessment of environmental

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compensation for the damage caused and the remedial measures to be taken to rectify the same and restore the water bodies from pollution.

11. The committee is also directed to conduct the water analysis test of the nearby water bodies and also ground water that is being supplied to the people in the locality. They can also assess the hazard quotient of that area and prepare an action plan with longer and shorter measures with lesser timelines, so as to remedy the situation.

12. They are also directed to inspect the individual industries in the industrial estate to ascertain as to whether all environmental laws mechanism are being strictly adhere to by them and if there is any violation found then, they are directed to take action against those violators including issuing necessary direction for closure until remedial measures are taken which will improve the situation apart from environmental compensation against those violating industries. '

13. The Central Pollution Control Board, Regional Office, Chennai will be the nodal agency for co-ordination and for providing all necessary logistics for this purpose.

14. The committee is directed to submit the report to this Tribunal on or before 25.11.2020..."

As per the scope of the direction given by Hon'ble Tribunal, Central Pollution Control Board has already taken up the study for preparation of Detailed Project Reports (DPRs) for remediation of contaminated areas in the country under National Clean Energy Fund (NCEF) project. The chromium contaminated area at Ranipet, Tamil Nadu has been identified as one of the priority area requiring remediation. In this regard, a status report was filed by CPCB on 24th November 2020 and requested six-month time for carrying out inspection of the industries located in the SIPCOT, Ranipet.

Further, Hon'ble Tribunal in its order dt. 03.02.2021 stated and directed as follows;

"... 8. It is quite unfortunate that Central Pollution Control Board (CPCB) who has been made a member of the committee, of conducting the inspection regarding the present status on the basis newspaper report, to submit the remedial measures and also the progress of the programme that has been earlier started for this purpose. If the Central Government scheme has been withdrawn then, what is the nature of steps taken by the State Government and the regulating authorises to remedy the situation. The directions mentioned in the status report will not be sufficient for the purpose of effective disposal of the case. It is for them to prepare

an action plan on the basis of the findings including the health study with they are expected to conduct including the contamination of water, the source of contamination the remedial measures to be taken to resolve the issue permanently and also indicate the temporary measures which will have to be taken for the purpose of mitigating the situation till permanent solution is implemented etc.

9. They are also expected to calculate the cost required for restoration and environmental compensation to be recovered from the persons who are responsible for causing such disaster.

10. The State Government is also expected to come with a proper action plan as it is not a simple issue which can be solved at the regulators level. A policy decision will have to be taken by the Government as to how such larger public interest disaster needs to be managed and to co-ordinate with concerned departments which are all required for the purpose of implementation of the policy, so as to achieve the goal which was intended by such scheme or policy that has been taken and also the implementation should be monitored by an Apex level responsible officer, so as to give necessary directions and guidelines as to how this will have to be implemented in its letter and its spirit, so as to protect the life of the people in that area especially when such serious things have been noticed by the Hon'ble Apex Court in Vellore Citizens' case (Welfare Forum Vs Union of India and others (1996) 5 SCC 647) as mentioned above.

11. When this was pointed out the counsel appearing for the Central Pollution Control Board (CPCB) submitted that they will take into account the directions given by the Tribunal in its letter and its spirit and come with a proper and effective report so as to resolve the issue. They wanted six months time for filing the status report. But three months have already lapsed after appointing the committee, but not even an interim report has been filed for this purpose. So under such circumstances we feel that three more months' time can be given to the committee to proceed with the work and file a report. If they are not able to file the final report, at least, they have to file an interim report regarding the nature of work done by them and the nature of studies conducted by them etc..."

The committee is directed to submit the report on or before 19.04.2021.

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2. Constitution of Committee

In compliance of the Hon'ble Tribunal the committee constituted with the following members;

1. Sub-Collector, Ranipet (Rep. District Collector)
2. Scientist D, MoEF&CC, RO, Chennai
3. Scientist D, CPCB, RD, Chennai
4. Joint Chief Environmental Engineer, O/o JCEE (M), TNPCB, Vellore
5. Superintending Engineer, WRD, Pennaiyar Basin Circle, Tiruvanamalai
6. Executive Engineer, Ground Water Department, Vellore
7. Project Officer, SIPCOT, Ranipet
8. Deputy Director, DISH, Vellore

3. Committee Meeting

Upon the constitution of the committee, a meeting was conducted on 16.12.2020 at Collectorate Office headed by the District Collector, Ranipet.

Discussion about Chromium dumpsite:

The status report dt. 24.11.2020 filed by CPCB was discussed. The joint committee felt that as per the scope of the committee directed by Hon'ble Tribunal was already completed and reported under NCEF project of MoEF&CC with remediation cost estimation. At present, remediation work is pending, which is to be carried out by TN State. Since financial matters is involved to remediate the site as well as affected area, Government of Tamilnadu needs to take further action.

District Collector informed that Govt. of Tamilnadu has written letter to Govt. of India for financial support to execute remediation works.

CPCB member informed that as per the terms of NCEF project scheme, Central funding for preparation of DPRs and remediation of contaminated area was 40% of the total project cost. The remaining 60% is to be met from State Government through Polluter Pays Principle/Public-Private Partnership/State support, etc. The said project was initiated in 6 States including Tamil Nadu who had given in-principle approval for funding State's share of 60%. The project for preparation of DPRs including TCCL contaminated area at Ranipet, Tamil Nadu was initiated in the year 2014. However, NCEF Project of MoEF&CC has been

discontinued by Government of India. CPCB has completed Detailed Project Report for remediation of chromium contaminated site at Ranipet, Tamilnadu based on detailed site investigation including human health risk assessment studies. The DPR along with templates of bid document was forwarded to Government of Tamil Nadu and TNPCB for execution of remediation works.

Since the TCCL was operated by State Government Department, TIDCO and also by few private entities, funds for remediation may be apportioned to both TN State as well as the other responsible parties, who operated the plant.

Discussion about inspection of industries

Further, the committee discussed about the inspection of industries located in SIPCOT, Ranipet. TNPCB informed that, there are 349 industries including 17 categories, Red, Orange Green& CETPs.

The committee decided to carry out the inspection of water polluting industries 17 categories, Red (Large & Medium) & CETPs during December 22 to 24, 2020 and informed the TNPCB to submit the details of other violating water polluting industries Red (Small) & Orange.

Discussion about assessment of Water Quality

In the matter of OA no. 131/2020, Hon'ble Tribunal directed the committee to assess the water quality to know the impact of pollution due to M/s Tirumalai Chemicals Ltd. In this matter, the committee has carried out monitoring of ground water, surface water & soil/sediment in and around the industry, which is adjacent to the M/s Tamilnadu Chromates & Chemicals Ltd., (M/s TCCL) on 16.12.2020. In the matter of OA no. 186/2020, the committee is directed to assess the present water quality. Since both the issue pertained in the same area, the committee decided to utilise the information submitted in the OA no. 131/2020. The findings in the matter of OA no. 131/2020 also reveals that chromium contamination is observed in the nearby surface water bodies & ground water. The findings are as follows;

1) During the study, Oxalic acid presence is identified in most of the location around the SIPCOT industrial area and its downstream and in all water bodies. To identify the sources of oxalic acid, inlet effluent samples of Common Effluent

Treatment Plant (CETP) were collected and same is found, which shows the oxalic acid pollution may be due to Tanneries/CETPs earlier/past discharge.

2) Presence of Hexavalent Chromium were also identified in the water bodies, which is due to the continuous seepage water flowing from openly stored sludge present in the closed unit of M/s Tamilnadu Chromate and Chemical Ltd., (TCCL).

3) Untreated sewage flow from nearby residential areas is also polluting the water bodies.

4) The drains/ channels connecting to the water bodies belongs to SIPCOT industrial area as well as the other local bodies found grown with bushes/plants, which results industries taking chances for illegal discharge.

5) The surface water bodies namely Puliyankannu lake, Karai lake, Sitheri lake and their drains were not properly maintained. Due to improper maintenance of drains, the water flow is affected, which leads to formation of wetland.

4. About M/s Tamilnadu Chromate & Chemical Ltd., (M/s TCCL), Ranipet

A brief history obtained from SIPCOT, Ranipet about the M/s TCCL ownership. M/s TCCL, is a TIDCO joint venture company promoted during 1972 in association with Sh. K. K. Mohiadeen for implanting the project for the manufacture of Basic Chromium Sulphate. The promoters agreement was terminated due to equity contribution failure. Thereafter, the company was managed by TIDCO through its nominee directors till Jan 1989 except for initial two years period of operation. During 1988, TIDCO disinvested its shareholding in favour of Sh. C. V. Sridhar, who was appointed as CMD of TCC to Sh. Ashok Balasubramanian. The plant was not operated after 1995-96 as TNPCB issued notice to stop production until the solid waste is disposed off.

TNPCB in its letter to Industries Department stated that 1.52 lakhs tonnes (out of 2.27 lakhs tonnes of chrome sludge) was generated during 1975 to 1988 when the management was with TIDCO and the balance 0.75 lakhs tonnes was generated during management of Sh. C. V. Sridhar and Sh. Ashok Balasubramaniam. Major 67% of waste generated during TIDCO tenure.

Further details of progress on criminal prosecution & steps for remediation initiated by TNPCB against TCC & promotors is enclosed as **Annexure III**.

5. Present Status of Remediation of Chromium Dumpsite

During the committee visit, it is observed that the seepage from the dumpsite is flowing through the drains and meeting to the surface water bodies (Karai Lake and its over flow finally meets River Palar). Remediation process is not carried out so for.

It is submitted that in compliance to the direction of Hon'ble NGT, Principal Bench, New Delhi order dt. 29.02.2021 in the matter OA No. 804/2017 in the matter of Rajiv Narayan & Ors. Vs. Union of India & Ors. with respect to contaminated sites in India, CPCB has convened a meeting with SPCBs/PCCs on 16.03.2021 to discuss Action Plan with roadmap and specific timelines for carrying out preliminary/detailed site investigation, preparation of DPRs, execution of remediation works, lifting of hazardous waste. Issues discussed w.r.t to State of Tamil Nadu is given below

Tamil Nadu: There is 01 contaminated site for which DPR has been prepared and forwarded the same to Government of Tamil Nadu and TNPCB for execution of Remediation works.

a) TNPCB informed that since the cost of actual remediation as per the DPR is very high, it is proposed to lift and disposal of hazardous waste through TSDF.

CPCB conveyed that Interim measures also proposed in DPR as per the request of TNPCB/Govt. of TN for capping of waste and contaminated soil along with storm water drainage system with a cost of about Rs. 12 crores. Afterwards, groundwater remediation by applying Pump & Treat method may be implemented initially for 5 years. It was also explained that cost of remediation will appear high due to inclusion of GW remediation cost over a period of 15 years. However, actual cost may be much lower. Initial cost of remediation may focus up 1-2 years O&M cost of GW remediation. While preparing DPR cost of transferring to TSDF was discussed however, it was deferred due to cost consideration.

CPCB has suggested TNPCB that once DPR is accepted by Project Steering Committee (PSC) headed by Chairman, CPCB remediation work needs to be executed within the timelines stipulated in DPR.

A copy of Minutes of Meeting held on 16.03.2021 is enclosed as **Annexure-I**

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Upon the communication of aforesaid Minutes of Meeting, TNPCB has furnished following action plan to CPCB vide letter dated 10.04.2021. A copy of TNPCB letter dated 10.04.2021 is enclosed as **Annexure-II**.

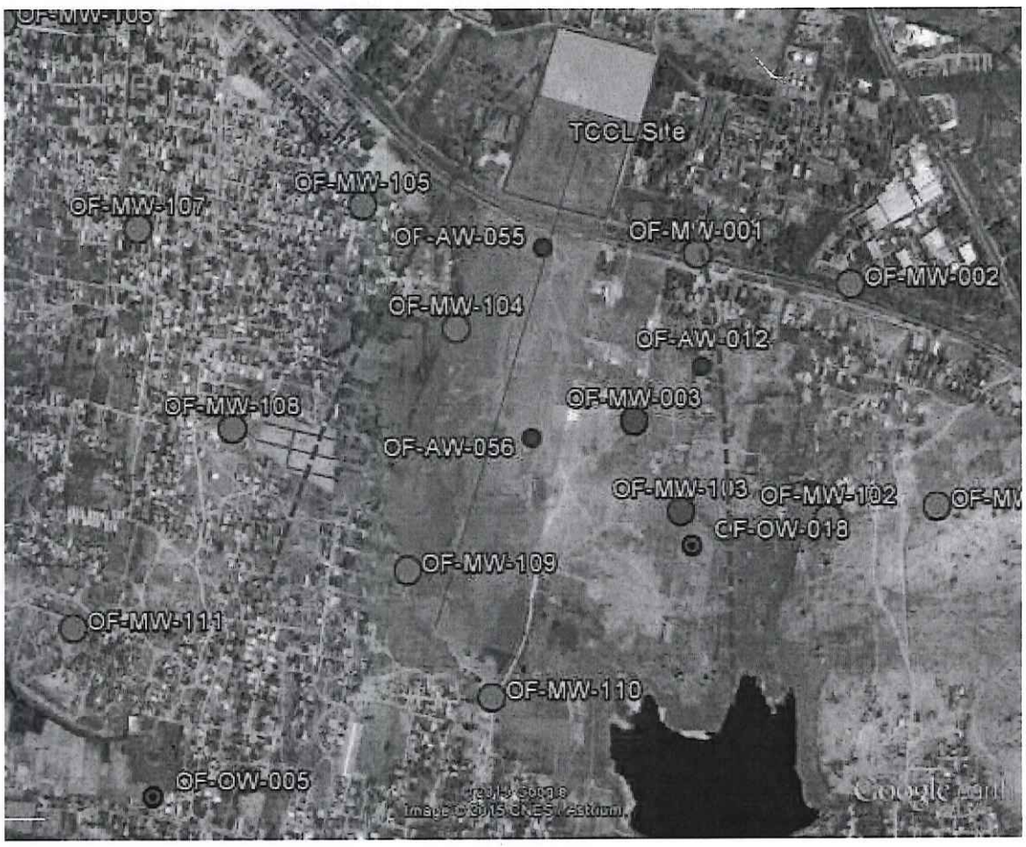
- ***The option of shifting accumulated waste at M/s TCCL site, Ranipet to TSDF secure landfill disposal is dropped. The implementation of "Interim Remedial Measures of Soil & Waste Remediation" at TCCL, Ranipet as per DPR prepared by consultant of CPCB is under consideration.***
- ***Consultant has been asked to present on the methodology as per DPR & to involve in the preparation of Technical & Cost Bid documents. Time requirement is one month (before 31st May 2021).***
- ***The proposal along with required documents to get approval of the Board including budget to meet from Environmental Compensation Fund. Time requirement is three months (before 31st August 2021).***

6. Summary of the Site Investigation & Findings as per DPR

Detailed site investigation was carried out by taking samples form 63 soil boreholes, 30 monitoring wells, 12 sediment boreholes, existing open wells, hand pumps, 11 bore water and 14 surface water samples. Key findings of detailed site investigation is given below:

- The main source of contamination is the waste dump located in the northern portion of the Site;
- Secondary sources of contamination attributed to abandoned CETP pumping wells located north of Site;
- Total Chromium and Hexavalent Chromium, have been identified as contaminants of concern in soils, groundwater and surface waters. Results indicates that the total and hexavalent chromium contamination is mainly limited to the on-site waste dump area and along the groundwater contamination plume migrating to off-site towards south of TCCL site. Further surface water impacts in the form of seepage from TCCL site flowing in open drains towards off-site areas in south of TCCL site.
- There is active contamination in surface drains due to seepage on-site waste dump at TCCL as well as run-off from dumpsite during monsoon.

- Sediment samples in receiving water bodes does not show hexavalent Chromium above its Limit of Reporting (LoR) but total chromium was detected in concentrations above the reference criteria.
- Cluster wells installed within TCCL premises in southwest corner (groundwater flow direction is northeast to southwest) indicate that total and Hexavalent Chromium in groundwater observed up to a depth of 45m below ground level (bgl) with maximum concentrations occurring at 30m bgl;
- At TCCL premises, the maximum concentration of hexavalent chromium was 5,596 mg/kg in soil and 277.6 mg/l in groundwater. In off-site areas, hexavalent chromium in groundwater observed between 0.18 mg/l to 49.43 mg/l. The permissible drinking water standard for chromium is 0.05 mg/l.
- Total and hexavalent chromium concentrations exceeded reference levels in the off-site groundwater sampling locations up to 0.5 km south of Site. Traces of contamination was found along the groundwater plume towards southwest direction from site up to a distance of about 2 kilometers, after which no contamination in groundwater was noticed further downstream towards the Palar River. The reason for the same is attributed to obstruction to groundwater flow influenced by naturally occurring geological fault.
- The off-site area with chromium contamination in groundwater are residential areas, comprising of open spaces, ponds along with limited agricultural activity.
- The monitoring and abstraction wells located off-site which have reported Total and Hexavalent Chromium in concentrations exceeding reference levels are indicated in red in the below Figure.



- Most of the off-site exceedances in groundwater are occurring within the modelled path (or in close proximity) and thus the exceedances are in agreement with the particle tracking model
- The Human Health Risk Assessment (HHRA) was carried out as part of the study to derive site specific remediation target levels (SSTLs) for remediation.

6.1 Remedial Measures of Waste & Soil as per the DPR

Based on the multi-criteria evaluation of the shortlisted techniques proposed for Waste and Soil remediation, excavation with on-site treatment and backfilling on and on-site engineered secured landfill (SLF) has been found to be the most sustainable option. This approach is intended to reduce the concentration of chemicals of concern (CoC) down to an acceptable level and eliminates further migration of Hexavalent Chromium from waste and/or soil into groundwater or surface water as applicable. This does not remediate the contaminants in the groundwater or surface water and therefore groundwater and surface impacts need to be addressed simultaneously.

Summary of Remedial Technology for the Site

Matrix	Location	Selected Option
INTERIM		
Soil and Waste	On-site	Capping of existing waste dump with provision for storm water collection
FULL SCALE		
Waste and Soil	On-site	Excavation, Treatment, and Backfilling in on-site engineered secured landfill (SLF)
Groundwater	On-site and Off-site	Pump and Treat with Source Removal and Hydraulic Containment System

An interim remedial plan for limiting the surface run-off and limiting leaching of hexavalent chromium into groundwater is also presented in sections below. The interim plan consists of capping the existing waste on-site by grading and engineering a cap to limit any contamination from leaching into groundwater during monsoons. Along with the cap, a storm water drainage network is also proposed prevent any surface water run-off from the site.

A copy of Detailed Project Report (DPR) for remediation of chromium contaminated sites at Ranipet, Tamil Nadu is enclosed as **Annexure-IV**.

7. Inspection of Industries by joint Committee

Out of 349 industries, 47 no. of industries are water polluting including CETPs, RED & Orange categories. There are two CETP's are in operation for treating Tannery Effluents generates from 99-member tannery units. The industries inspected by the committee during December 22 to 24, 2020 are listed below and individual industries observation are as follows;

Operational during inspection:

i. M/s Malladi Drugs &Pharmaceuticals Limited (Unit I)
ii. M/s Malladi Drugs &Pharmaceuticals Limited (Unit 3)
iii. M/s Arjun Chemicals Pvt Ltd

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iv. M/s Ranipet SIDCO Finished Leathers Effluent Treatment Company (P) Ltd (CETP)

v. M/s SIPCOT-SIDCO Phase-II Entrepreneur Finished Leather Effluent Treatment Co. (P) Ltd. (CETP)

vi. M/s Ultramarine and Pigments Ltd

vii. M/s Sviss Labs Private Limited

viii. M/s Thirumalai Chemicals Limited

Non-operational during inspection:

ix. M/s Greaves Cotton Limited, Light Engines, Unit-Ii,

x. M/s Alchymars Icm Sm Private Limited (Unit-II)

xi. M/s Murugappa Morgan Thermal Ceramics Limited

xii. M/s Mitsubishi Heavy Industries India Precision Tools Limited

7.1 M/s Malladi Drugs &Pharmaceuticals Limited (Unit I)

- The unit is consented for the production of Ephedrine Hydrochloride - 10.0 MT/M from molasses and benzaldehyde as raw material.
- The unit has obtained consents under Water & Air Act with validity till March 31, 2021 and Hazardous waste authorisation with validity till 19.06.2022 obtained for used oil and spent carbon only.
- The unit has installed ETP of capacity 300 KLD. The treatment plant consists of Bioreactor, RO plant, Multi effect evaporator (MEE). Triple effect evaporator (TEE), Fluidised immobilised carbon cell oxidation (FICCO) & Clarifier.
- The concentrate from TEE is sent for co-processing to cement industry.
- The condensate water from MEE & TEE is further treated in FICCO treatment system to reduce the COD. The treated effluent from FICCO is consented to reuse in process, cooling tower & gardening.
- The unit is claiming that presently, the treated effluent is completely reused in process, cooling tower, boiler not used for gardening purpose and achieving ZLD.
- The unit has installed pH, COD, BOD & TSS online analyser in the outlet of treated effluent.
- Earlier, the unit is carrying out the bio composting of the concentrated effluent. It is informed that bio composting was stopped before September 2020. Presently, the concentrate is being sent for co-processing to cement industry.

- The yeast sludge generated was used along with press mud for bio composting. Since composting is stopped, presently the yeast sludge is being disposed along with concentrate for co-processing, whereas no approval has been obtained so for this disposal method.
- The sludge generated in the FICCO treatment is removed through clarifier. This sludge is being presently sent to TSDF, whereas the characteristics of the sludge is not carried out.
- The unit has not obtained HW Authorisation for the generation, storage& disposal of spent solvent residue generated from the process, off specification product and chemical drums/barrels/containers/ bags. It is informed that spent solvent residue is being sent to co-processing through M/s Raj Pharma Transporter, whereas the quantity and name of the co-processing unit is not provided by the industry. The solvents used in the process are Toluene, Methanol & Acetone.
- The unit has installed three boilers of capacities 4 TPH, 3.5 TPH & 6 TPH using fuel Biogas/furnace oil (4 TPH) & wood respectively. It is informed that 3.5 TPH boiler is regularly used for operation and remaining two are stand by. So OCEMS is installed to the 3.5 TPH boiler stack & connected to CPCB/TNPCB server. Whereas on verification of records of boiler operation, 6 TPH boiler is also operated regularly and no OCEMS system is installed.
- Individual wet scrubber is installed as APCD to boilers 3.5 TPH & 6 TPH. During inspection, both the boilers operated and scrubbers are not in operation.
- The unit has installed & connected flow meters of Bio reactor feed, RO permeate & MEE-TEES condensate to CPCB. Whereas in TNPCB server additional flow meters connected are RO feed, MEES feed & TEES feed.
- The spent solvent residue & re-processing materials are kept stored in the open yard.
- Even though, the unit stopped bio composting process before September 2020, the bio compost is still kept in the open yard without any covering, which lead to the carryover of compost during the rainy season. This carry over is collected in the lagoon and same is witnessed by the presence of sludge deposit in the lagoon.

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7.2 M/s. Malladi Drugs and Pharmaceuticals Ltd., (Unit-III)

- The unit is consented for the production following products

Pseudo Ephedrine Hydrochloride	12 TPM
Alprazolam	0.012 TPM
Propranolol Hydro Chloride	24 TPM
Albendazole	0.180 TPM
Theophyline	3 TPM
Dapsone	1.8 TPM
Atenolol	48 TPM

- The unit has obtained consents under Water & Air Act with validity till March 31, 2021 and Hazardous waste authorisation with validity till 19.06.2022 obtained for used oil and spent carbon only.
- The unit has installed ETP of capacity 194 KLD. The industry is segregating the low & high TDS effluent. The low TDS effluent is treated in ETP consisting of collection tank, equalisation tank, aeration tank, settling tank, activated carbon filter, multi effect evaporator & Agitated thin film dryer. High TDS stream is consisting of neutralisation multi effect evaporator & Agitated thin film dryer.
- The low TDS treated effluent after treatment is taken directly to MEE without RO system, where huge amount of energy is required to concentrate.
- Acetic acid is generated as by-product from the process, which is not incorporated in the consent obtained from TNPCB
- The unit has not obtained HW Authorisation for the generation, storage& disposal of spent solvent residue generated from the process, off specification product and chemical drums/barrels/containers/ bags. It is informed that spent solvent residue is being sent to co-processing through M/s Raj Pharma Transporter, whereas the quantity and name of the co-processing unit is not provided by the industry. The solvents used in the process are Toluene, iso propyl alcohol, Methanol & Acetone.
- The spent solvent residue & re-processing materials are kept stored in the open yard.
- The unit was not in operation during the committee visit due to closure direction issued by District Coordination Committee (DCC) & TNPCB. The closure issued because the industry was sending concentrate FCE wastewater through tanker lorry without any permission/ consent. It was informed that concentrate is also given to M/s

Raj Pharma Transporter. Industry claims that this waste water (concentrate FCE) is used as raw material by M/s Maha Tripurasundari industries pvt. Ltd., Telangana.

- In view of violation, TNPCB has imposed environmental compensation for Rs. 47,10,000/- and same is paid by the industry.

7.3 M/s SVISS LABSS PVT LIMITED

- The unit is consented for the production of seven products. The details are as follows;
  - Theophylline – 6 TPM
  - Amniophylline – 4 TPM
  - Caffeine – 2 TPM
  - Chloramphenicol powder – 0.80 TPM
  - Ibuprofen – 11.60 TPM
  - Chloramphenicol palmitate – 2.5 TPM
  - Trimethoprim – 5 TPM
- As per the information submitted by the unit, the products & by products produced last three financial years are tabulated below

Product & By Product manufactured	**Product Manufactured in TPA**		
	2017-18	**2018-19**	**2019-20**
Ibuprofen Stage –I Iso Butyl Acetophenone	185.21	211.94	215.79
Aluminium Chloride Liquid	8350	9205	9540
HCl	137.5	159	161.8

- The unit has not obtained consents for by product Aluminium Chloride Liquid & HCl.
- The unit has obtained consents under water & Air Act with validity till 31.03.2021.
- The unit has not obtained authorisation under hazardous waste rules for generation, storage & disposal of off specification/ contaminated product.
- The total fresh water consumption is 72.79 KLD, which is met through SPICOT supply. At present the unit is producing one product and generating 1.2 KLD of waste water (0.6 KLD from lab & floor washing and 0.6 KLD from softener, cooling tower & blow down).
- The unit has submitted that the installed capacity of ETP is 1.2 KLD. The unit has provided separate treatment system for low TDS stream & high TDS stream. Whereas, the unit claims lab & floor washing as high TDS stream, which

scientifically not correct. This effluent can be treated in ETP rather than taking directly to evaporator. Treating this effluent in present evaporator system provided in the plant is not technically & economically viable.

- The unit has installed own designed evaporator, where design inlet concentration of TDS is not known and it is informed that the unit is achieving TDS around 1 lac concentration. The observed TDS of the sample which is fed to evaporator is 3982 mg/l and to achieve the said TDS concentration I lac mg/l huge amount of energy is required.
- The unit has installed single stage RO system, where the reject concentration observed is 2700 mg/l.
- The effluent generated from the process is High TDS stream, which can't be treated in ETP due to high strength of effluent.
- The unit claims that no process effluent is generated, whereas the process wash water is being recycled. As per the information submitted by the unit, the fresh water is used for washing of organic layer, in such case additional water is being getting accumulated along with recycle water and moreover continuous recycling may also lead to contamination in the product. So in any case of time chances are there for disposal of wash water to ETP, this quantity generation is not mentioned.
- As per the consent, the trade effluent generation for the consented seven products is 24 KLD, whereas the unit has provided only 1.2 KLD ETP capacity against the consented quantity.
- The unit has provided collection, neutralisation & evaporator for high TDS effluent treatment.
- Low TDS effluent is directly taken to RO system and the reject is sent to Evaporator along with high TDS effluent for concentration. Then the concentrate is sent to elevated solar evaporation pond. The unit has not provided any treatment system for the low TDS effluent generated from softener, cooling tower & blow down before treating in RO, which may affect the working performance of the RO system.
- Before installation of evaporator system, ZLD is achieved through ground level solar evaporation pond. TNPCB directed to remove this SEP after installation of evaporator, whereas the unit still having the system and effluent is present.
- The unit has installed flow meter at outlet of ETP only.

7.4 M/s Ultramarine & Pigments Ltd.

- The unit is consented for the production of following products with installed capacity and its present production;

Products	Consented Qty	Present
Synthetic Detergents (Powder, paste, cake etc)	4000 MT/Month	2500 MT/Month
Sulphonic Acid	1350 MT/Month	1350 MT/Month
Alpha Olefin Sulphonate	1000 MT/Month	1000 MT/Month
Ultramarine Blue	200 MT/Month	200 MT/Month

- The total water consumption including process and other activities like washing, boiler, domestic is 106.9 KLD, which is met through SIPCOT water supply and wastewater generation from process is 9.1 KLD and domestic is 4.5 KLD.
- The unit has obtained consents under water Act & Air Act with validity till 31.03.2021 and Hazardous waste authorisation with validity till 31.03.25
- The unit is achieving ZLD. The treatment system consisting of settling tank, RO (3 stages), MEE & ATFD.
- During the inspection, it is observed that settling tank is not properly maintained and found with algae growth.
- TDS is measured in RO water to know the working performance, it is observed that TDS in feed, permeate & reject is 3000 mg/l, 580 mg/l and 4500 mg/l respectively, which shows poor performance of RO due to improper maintenance.
- Fugitive emission of SO2 was observed in the kiln area due to leakages.
- During inspection, upgradation of kiln was observed and the waste generated is found stored in open yard.

7.5 M/s Arjun Chemicals Pvt Ltd.,

- The unit is consented for production of Dynasize – 500 MTM, Dynasol – 300 MTM & AKD/ Composize - 580 MTM. During the committee inspection, unit was not in operation.
- The unit has obtained consent under water & Air Act with validity till 31.03.2021.
- The source of fresh water is met through SPICOT supply. The unit has installed RO system for the fresh water supplied by SIPCOT. The total fresh water consumption is about 52 KLD, in which 10 KLD of RO reject is used for gardening.

- As per the consented condition, the unit has installed electromagnetic flow meter for discharge of RO reject whereas online TDS meters is not provided at discharge point.
- The unit claims that no wastewater is generated from the process. The vessels/ reactors are being washed with solvent at time of changeover of other batch product production and the washed solvent is stored and again used in the process.
- The unit has provided wet scrubber to rosin crusher & melter.
- TNPCB has imposed environmental compensation for Rs. 5,00,000/- based on the inspection carried out under CEPI action plan and same is paid by the industry.

7.6 M/s P A FOOTWEAR P LTD. Unit-II

- The unit is involved in production of Semi-Finished to finished leather with consented quantity of 37.50 T/M.
- The total water consumption is 27 KLD, which is met through SIPCOT water supply and reuse of RO permeate.
- The consented quantity of waste water generation is 25 KLD, whereas the unit presently generating 19 KLD.
- The unit was member of CETP till 2016 and thereafter, the effluent generated in the plant is treated in their own ETP.
- The unit is achieving ZLD, the treatment system installed are neutralisation, primary clarifier, Aeration, secondary & tertiary clarifier, filter, RO system (3 stage), salzberg mechanical dryer.
- Salzberg mechanical dryer will not effectively work to concentrate the effluent & salt out.
- The unit has obtained consents under water Act & Air Act with validity till March 31, 2022 and Hazardous waste authorisation with validity till 14.04.2024.
- During the inspection, wet sludge & salt (semi solid) is found stored in open drums.
- The unit has installed seven flow meters and connected to TNPCB server.

7.7 M/s Thirumalai Chemicals Ltd

- In the matter of OA no. 131/2020, the committee constituted by Hon'ble NGT inspected the unit and given the following recommendations;
- As the unit was observed for non-compliance of consent order conditions, discharges noticed in violation of consent conditions, internal discharge to the environment -land, water and air resulting into acute injury or damage to the environment and injection of treated /partially treated /untreated effluents to the ground water and based on repeated violations, the unit was directed by TNPCB to restrict the production of 50 % of its consented quantity so as to achieve zero liquid discharge consistently till the commencement & effective functioning of newly constructed ZLD components. As the unit is in the process of establishing ZLD system and started trial runs for validation of the equipment to achieve Zero liquid discharge with respect to treating effluents, the unit shall be allowed to operate in full load only after ensuring the complete/full-fledged operation of upgraded ETP by TNPCB. The full-fledged operation of ZLD system should be commenced within four months-time by the TCL. Further, the conditions issued by TNPCB are to be complied within three-months times.
- After commissioning of upgraded ETP, adequacy test needs to be carried out by an independent govt academic/research institution like IIT Madras and to certify that the unit has achieved 100% ZLD capacity.
- TCL shall, in consultation with reputed institute such as IIT, Madras, prepare a DPR within three months-time, for the remediation of the land where the untreated effluent was discharged within the industry site and execute the task of remediation of contaminated site, under the supervision of TNPCB. The entire cost for the study and remediation shall be borne by the industry as per polluter pays principle.
- In view of the non-compliance by M/s TCL, TNPCB imposed environmental compensation twice of Rs. 18,60,000 vide order dated 13-11-2019 and Rs. 17,40,000 vide order on 9-12-2020. Both the compensations were paid by TCL on 13-12-2019 & 22-1-2021 respectively.

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7.8 M/s. Ranipet SIDCO Finished Leather Effluent Treatment Company Limited (Phase 1)

- The CETP is established for treatment of tannery effluent. The member units are involved in processing Semi finished to finish leather. Totally 88 tanneries are member of this CETP, in which 79 units are in operation.
- The CETP is designed for treatment of 2.5 MLD wastewater, TNPCB has restricted the effluent generation to 75 % i.e 1875 KLD. Presently CETP receives wastewater around 1 to 1.5 MLD within the restricted quantity.
- The treatment unit comprises of Receiving Sump, Equalization tank, flash mixture, Primary Clarifier, Aeration tank I & II, Secondary Clarifier, Reactor Clarifier, Multi Grade filters, Ultra filters, 3 stage R.O system, Multi Effect Evaporator (MEE), Centrifuge and filter press.
- The CETP generates approximately around 12 TPD sludge and disposed to TWML Gummidipoondi & Arunachala Enterprises (for Co – Processing), Karur. At accumulated sludge stored is around 1300 Tons.
- At present no prescribed standards for CETP inlet effluent, however all the member units are discharging the effluent after pre settling. The sludge removed by the member units is being disposed through CETP.
- As per the record of CETP, as on 30th November 2020 total salt Accumulated is around 12403.28 MT.
- CETP has installed 18 flow meters which are connected to TNPCB server & CPCB server.
- Construction activities is being carried out by the CETP for upgradation of treatment units, during the inspection coloured seepage was noticed below the ground level/foundation area and samples were collected to know the characteristics of seepage. The observed values are TDS - 31030 mg/l, Chloride – 9050 mg/l and sulphate 1960 mg/l, COD – 4872 mg/l & BOD – 768 mg/l. As per the analysis report, it clearly indicates the contamination is due to tannery effluent.
- During the inspection, the committee instructed TNPCB & CETP to stop the construction activities until identifying the sources of pollution and take necessary action after identification of sources.
- CETP has obtained consents under Water & Air Act with validity till 31.03.2022, whereas HW Authorisation expired on 31.03.2020.

- CETP has not obtained HW Authorisation for Storage & disposal of chemical drums/barrels/containers/ bags.

7.9 M/s. SIPCOT & SIDCO Phase 2 Entrepreneur Finished Leather Effluent Company (P) Ltd

- The CETP is established for treatment of tannery effluent. The member units are involved in processing Semi finished to finish leather. Totally 20 operational tanneries are member of this CETP and proposed member tanneries are 20 units.
- The CETP is designed for treatment of 2.5 MLD wastewater, presently it receives wastewater around 1 to 1.5 MLD. The treatment unit comprises of Receiving Sump, Equalization tank, flash mixture, flocculator, Primary Clarifier, Aeration tanks, Secondary Clarifier, flash mixture, flocculator, Pressure sand Filter, Reactor Clarifier, Neutralization tank, Ultra filters, Organic scavengers, R.O (2 stage) systems, Multi Effect Evaporator (MEE), Centrifuge and filter press.
- CETP is upgrading the treatment system such as oxidation pond, 3rd stage RO and MEE with ATFD.
- All the member units are discharging the effluent to CETP without pre-treatment and inlet norms for CETP is also not prescribed by TNPCB.
- CETP has installed 18 flow meters which are connected to TNPCB server & only two flow meters (inlet & OHT) to CPCB server.
- The CETP generates approximately around 0.8 - 1 TPD sludge and disposed to TWML Gummidipoondi. Sludge is disposed as on December, 2020 is 1557 tons.
- As per the record of CETP, as on December 2020, the total salt accumulated is around 679 MT.
- The sludge stored in the SLF facility (old & new) is 4979 Tons. This SLF facility found in damage condition.
- CETP has obtained consents under Water Act & Air Act with validity till 31.03.2022, whereas the HW Authorisation expired on June 2020.
- CETP has not obtained HW Authorisation for Storage & disposal of chemical drums/barrels/containers/ bags.

8.0 Environmental Compensation Calculation:

Chromium contamination is mainly due to the dumpsite of M/s TCCL. The actual remediation cost for restoration of the environment as per DPR shall be borne by the M/s TCCL.

The committee has noticed other violation of the following industries in handling of hazardous waste generation, storage & disposal as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

i. M/s Malladi Drugs &Pharmaceuticals Limited (Unit I)
ii. M/s Malladi Drugs &Pharmaceuticals Limited (Unit 3)
iii. M/s Sviss Labss Private Limited
iv. M/s Ranipet SIDCO Finished Leathers Effluent Treatment Company (P) Ltd (CETP)
v. M/s SIPCOT-SIDCO Phase-II Entrepreneur Finished Leather Effluent Treatment Co. (P) Ltd. (CETP)

So, the committee calculated Environmental Compensation as per the "Determination of Environmental Compensation to be recovered for violation of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016" as in the matter of OA No. 804 of 2017 (Earlier OA No.36/2012) Principal Bench, New Delhi. The methodology adopted as per the above said report is detailed below;

Approach for calculating environmental compensation:

The following quantity based environmental compensation calculation in Rupees may be used and be imposed on violating facility operator:

Environmental Compensation (EC) = Q x ERF x R

Where, Q is noticed1 or observed1 quantity (in tonne) of hazardous or other wastes which have not been managed in compliance with various provisions of the Acts/Rules/Guidelines/conditions of the authorisation/directions issued by CPCB/SPCB/PCC/MoEF&CC (barring procedural violations which have not caused environmental damage)

ERF = Environmental Risk Factor which is a number denoting the increasing degree of risk to the environment and human health due to the scenarios as given in the Table

Sl. No.	Violation	ERF	
		For Hazardous Waste	For Other* Waste
1.	When hazardous and other wastes is disposed at unauthorised place or handed over or sold to unauthorised party	1.5	0.03
2.	When treatment has not been imparted, as required, but only partial treatment has been given (by TSDF/Actual user)	1.0	0.2
3.	When product (derived from hazardous or other waste) is not confirming to prescribed specification or is specified for restricted use but sold in open market against (in case of actual user)	1.0	0.2
4.	Wastes found stored beyond the stipulated period (refer Rule 8 of the HOWM Rules, 2008)	0.1	0.05

**Applicable to waste generated indigenously only*

R= Environmental Compensation factor, which may be taken as Rs. 30,000.

Case I: If authorisation has been taken at any point of time, in such cases, Q may be taken as below:

Q= Quantity in terms of tone/per year, as specified in authorisation (one year =300 days) x Y

Where, Y is Number of years of operation of the facility and may be considered as given in Table. In case authorisation is given in quantity/day, then convert in tone/year by multiplying the same with 300 days.

Case II: If authorisation has not been taken at any point of time for all or any given category of hazardous or other waste being generated/utilized

When above scenario comes to the notice of SPCB/PCC/CPCB, it may be difficult to find Q as records pertaining to quantity of generation/utilization of hazardous or other waste may not be available. In such case, a generalised way of calculating Environmental Compensation (EC) in Rupees may be used as below:

$$EC \text{ (in Rupees)} = T \times S \times C \times ECF \times Y$$

Where, ***T = Type of facility factor*** and may be taken as below from Table:

Sl. No.	Scale of operation	Factor
1.	(i) Actual user procuring hazardous waste from outside their premises including importing hazardous or other waste from other country	1.5
2.	(i) Actual user engaged in utilizing/ recycling of only other wastes which are generated indigenously, and; (ii) All facility other than at Sl. No. (1) and 2(i) above	1

S = Scale of Operation factor of the facility and may be taken from below Table:

Scale of operation	Scale Factor
Large	1.5
Medium	1
Small or Micro	0.5

C = Category of Facility factor and be taken from below Table;

Scale of operation	Scale Factor
Red Category	1
Orange Category	0.2
Green Category	0.05

ECF = Environmental Compensation Factor, which is summation of one or more ECF, as applicable, as given in below Table:

Sl. No.	Type of operations from where waste is generated	ECF
1.	Main Process (when significant quantity of waste generation like spent acid, process sludge, spent solvent, etc.)	45,00,000
2.	Pollution control equipment like ETP, APCDs, etc. such as ETP sludge, incineration bottom residues, cyclone residue, etc.	35,00,000
3.	Ancillary equipment used for supporting the industrial process such as DG set, etc.	10,00,000

4.	Handling of hazardous chemicals and wastes (waste packaging materials like emptied drums/bags/etc. contaminated with hazardous chemicals/wastes) and Cleaning activities like cotton/cloth waste contaminated with oil/grease/grease, hazardous chemical storage tank, etc.	20,00,000
5.	Other operations not listed above	10,00,000

Y = Number of years of operation of the facility and may be considered from below Table:

Years of Operations	Factor to be taken
More than 03 years	5
Equal to less than 03 years	Actual duration of operation in months/12

Committee decided to consider *Case 1 formula*, incase the industries applied for the hazardous waste authorisation for the left out categories.

8.1 M/s. Malladi Drugs &Pharmaceuticals Limited (Unit I)

Violation Noticed: HW Authorisation not obtained & applied for generation, storage & disposal of spent solvent residue generated in the process, off specification products, chemical drums/barrels/containers/ bags.

Environmental Compensation (EC) = Q x ERF x R

Q =Quantity in terms of tone/per year, as specified in authorisation x Y

*Quantity in terms of tone/per year = **18.2***

*Y = Number of years of operation = **5***

*ERF = Environmental Risk Factor = **1.5***

*R= Environmental Compensation factor, which may be taken as **Rs. 30,000**.*

EC = (18.2 x 5) x 1.5 x 30000 = Rs. 40,95,000

EC calculated for M/s. Malladi Drugs &Pharmaceuticals Limited (Unit I) is Rs 40,95,000/- (Rupees fortylakhs ninety-fivethousand)

8.2 M/s. Malladi Drugs &Pharmaceuticals Limited (Unit 3)

Violation Noticed: HW Authorisation not obtained & applied for generation, storage & disposal of spent solvent residue generated in the process, off specification products, chemical drums/barrels/containers/ bags.

Environmental Compensation (EC) = Q x ERF x R

Q =Quantity in terms of tone/per year, as specified in authorisation x Y

Quantity in terms of tone/per year = 41.6

*Y = Number of years of operation = **5***

*ERF = Environmental Risk Factor = **1.5***

*R= Environmental Compensation factor, which may be taken as **Rs. 30,000**.*

EC = (41.6 x 5) x 1.5 x 30000 = Rs. 93,60,000

EC calculated for M/s. Malladi Drugs &Pharmaceuticals Limited (Unit 3) is Rs 93,60,000/- (Rupees Ninety-three lakhs sixty thousand)

8.3 M/s Sviss Labss Private Limited

(i) Violation Noticed: HW Authorisation not obtained for generation, storage & disposal of off specification products.

EC (in Rupees) = T x S x C x ECF x Y

*T = Type of facility factor = **1***

*S = Scale of Operation factor = **1***

*C = Category of Facility factor = **1***

*ECF = Environmental Compensation Factor = **45,00,000***

*Y = Number of years of operation = **5***

EC = 1 x 1 x 1 x 45,00,000 x 5 = Rs. 2,25,00,000

(ii) Violation Noticed:Not obtained Consent for By products till date.

Environmental compensation is calculated using Pollution Index Formula

EC = PI * N * R * S * LF

PI = Pollution Index, RED category industry **(PI = 80)**

R = Rupees Factor **(R = 250)**

S = Scale of Operation, Medium Scale **(S = 1)**

LF = Location Factor, CEPI Area **(LF = 2)**

N= Number of days for which violation took place is the period between the day of violation observed/ due date of compliance of directions and the day of compliance verified by CPCB/ SPCB/ PCC. *for interim compensation calculation no. of days taken from date of committee visit 22.12.2020 to 31.03.2021.***(N = 100 days)**

EC = 80 * 100 * 250 * 1 * 2 = Rs. 40,00,000 = Rs 40 lakhs.

Total EC = Rs. 2,25,00,000 + Rs. 40,00,000 = 2,65,00,000/-

Total EC calculated for M/s. Sviss Labs Pvt. Ltd., is Rs 2,65,00,000/- (Rupees Two Crores Sixty-five Lakhs)

8.4 M/s Ranipet SIDCO Finished Leathers Effluent Treatment Company (P) Ltd (CETP)

Violation Noticed: HW Authorisation not obtained& applied for generation, storage & disposal of chemical drums/barrels/containers/ bags.

Environmental Compensation (EC) = Q x ERF x R

Q =Quantity in terms of tone/per year, as specified in authorisation x Y

*Quantity in terms of tone/per year = **1***

*Y = Number of years of operation = **5***

*ERF = Environmental Risk Factor = **1.5***

*R= Environmental Compensation factor, which may be taken as **Rs. 30,000**.*

EC = (1 x 5) x 1.5 x 30000 = Rs.2, 25,000

EC calculated for /s Ranipet SIDCO Finished Leathers Effluent Treatment Company (P) Ltd is Rs 2,25,000/- (Rupees two lakhs twenty-five thousand)

8.5M/s SIPCOT-SIDCO Phase-II Entrepreneur Finished Leather Effluent Treatment Co. (P) Ltd. (CETP)

Violation Noticed: HW Authorisation not obtained& applied for generation, storage & disposal of chemical drums/barrels/containers/ bags.

Environmental Compensation (EC) = Q x ERF x R

Q =Quantity in terms of tone/per year, as specified in authorisation x Y

*Quantity in terms of tone/per year = **0.75***

*Y = Number of years of operation = **5***

*ERF = Environmental Risk Factor = **1.5***

*R= Environmental Compensation factor, which may be taken as **Rs. 30,000**.*

EC = (0.75 x 5) x 1.5 x 30000 = Rs.1,68,750

EC calculated for M/s. SIPCOT-SIDCO Phase-II Entrepreneur Finished Leather Effluent Treatment Co. (P) Ltd., is Rs 1,68,750/- (Rupees one lakh sixty-eight thousand seven hundred fifty only)

8.6 Environmental Compensation imposed on other industries by TNPCB:

TNPCB has imposed environmental compensation on 28.01.2020 for 24 nos. of violating industries in the SPICOT industrial area based on the inspection as per OA 1038/2019 order dt. 14.09.2019 and also based on the routine/ public complaint inspections. Since the said order was stayed by Hon'ble Supreme Court many industries not paid the compensation. The details are as follows;

S.No.	Name of Industry	Environmental Compensation Imposed in Lakhs	Amount Received in Lakhs	Balance to be received in Lakhs
1	M/S. Snap Natural And Alginate Products P Lt	10	0	10
2	M/S. Alchymars Icm Sm Private Ltd Unit Ii, Previously Ramnath Chemicals,	8.6	8.6	0
3	M/S. Arjun Chemicals Pvt Ltd	5	5	0
4	M/S. Greaves Cotton Limited	5	5	0
6	M/S. Bright sun Leathers,	1	1	0
7	M/S. Hide Craft(Tan Leathers & Chemical Pvt Ltd),	1	1	0

8	M/S. Hi Q Leathers,	1	1	0
9	M/S. Prestige International,	1	0	1
10	M/S. Standard Chemicals And Leathers,	1.18	0	1.18
11	M/S. Titan Leather Exports Unit Ii	1	0	1
12	M/S. Joseph Exports	1	1	0
13	M/S. Vks Exports,	1	1	0
14	M/S. Winner Leather Creation,	1	1	0
15	M/S. Jay Ar Enterprises	1	1	0
16	M/S. Pioneer Leder Tex P Ltd	1	0	1
17	M/S. Sri Hari Leathers	1	1	0
18	M/S. Hariharan Leathers Crr Leathers Unit B	1	1	0
19	M/S. Siva Leathers Pvt. Ltd	1	1	0
20	M/S. Sunrise Tanners	1	1	0
21	M/S. Vinyork Leather Works	1	0	1
22	M/S. Sns Leathers	1	1	0
23	M/S. Sri Thirumalai Leathers	1	0	1
24	M/S. Mahalakshmi International	1	0	1

The committee in the matter of OA no. 186/2020 decided that same amount shall be imposed on the industries as calculated by TNPCB.

9. Recommendations for industries:

Tamilnadu Pollution Control Board may be directed to issue notice to the following industries and take appropriate action accordingly.

M/s Malladi Drugs &Pharmaceuticals Ltd., (Unit I)

- The unit shall obtain proper consent for disposal of bio yeast sludge by mixing with TEE concentrate, which is sent for co-processing.
- Characteristics of the sludge generated from clarifier after FICCO treatment shall be carried and accordingly consent/ authorisation shall be obtained from TNPCB for generation, storage & disposal.
- The unit shall obtain HW Authorisation for generation, storage & disposal of spent solvent residue generated in the process, off specification products & chemical drums/barrels/containers/ bags. Accordingly, waste shall be disposed to authorised recycler or pre- processor or co-processor or TSDF.

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- Since the industry is operating both the boilers 3.5 TPH & 6 TPH regularly, OCEMS shall installed in the stack attached to 6 TPH boiler also for the parameter PM.
- Since the industry is claiming ZLD system and not using the treated effluent for gardening, online analyser for the parameters pH, COD, BOD & TSS may be removed. To ensure that no effluent used for gardening, the unit shall install flow meter for the treated effluent reuse.
- To verify the ZLD system, flow meters in the RO reject, FICCO inlet and treated effluent reuse shall be installed & connected to CPCB and TNPCB server as well as the flow meters RO feed, MEES feed & TEES feed connected to TNPCB shall also be connected to CPCB server.
- The unit shall provide proper shed for the storage of spent solvent residue as well as for reprocessing materials/ solvents.
- The unit shall take necessary steps to remove the compost placed in the open yard. The compost shall be bagged & stored properly. The sludge in the collection lagoon shall also be removed, stored & disposed properly.
- EC calculated by the committee for violation of HW Rules is Rs 40,95,000/- (Rupees forty lakhs ninety-five thousand) and same shall be remitted to CPCB

M/s. Malladi Drugs and Pharmaceuticals Ltd., (Unit-III)

- The unit shall install RO system for treatment of low TDS effluent before sending to MEE.
- The unit shall obtain consent from TNPCB for the production of Acetic Acid as by-product.
- The unit shall obtain HW Authorisation for generation, storage & disposal of spent solvent residue generated in the process, off specification products & chemical drums/barrels/containers/ bags. Accordingly, waste shall be disposed to authorised recycler or pre- processor or co-processor or TSDF.
- The unit shall stop sending the concentrate FCE wastewater to any of recycler or industries without obtaining consent/approval from TNPCB.
- The unit shall provide proper shed for the storage of spent solvent residue as well as for reprocessing materials/ solvents.
- EC calculated by the committee for violation of HW Rules is 93,60,000/- (Rupees Ninety-three lakhs sixty thousand) and same shall be remitted to CPCB

M/s Sviss Labss Pvt Ltd.

- The unit shall obtain consent for the production of by-products Aluminium Chloride Liquid & HCl.
- The unit shall obtain authorisation for generation, storage & disposal of off specification/ contaminated product under hazardous waste rules.
- The unit shall upgrade RO as well as evaporator system for achieving proper treatment.
- The unit shall upgrade the ETP for the consented quantity and also provide proper physiochemical treatment for the effluent generated from lab & floor washing followed by RO. The RO reject shall be treated in MEE to achieve ZLD. The unit shall install ATFD to remove the salt rather than disposing to elevated solar evaporation pond.
- The unit shall ensure no effluent is discharged to the ground level solar evaporation pond and this pond shall be dismantled.
- The unit shall provide proper treatment system for the effluent generated from softener, cooling tower & blow down before taking to the RO system directly.
- As the unit claims no effluent generation from process, so TNPCB shall carry out detail study of the process to estimate exact quantity of waste water generation from process and moreover stream wise waste water generation shall be specified in the consent.
- The unit shall install flow meters at inlet of individual streams, RO inlet, RO reject, RO permeate, MEE inlet & MEE condensate and connect to CPCB/ TNPCB server to verify the ZLD system.
- EC calculated by the committee for violation of HW Rules is Rs 2,65,00,000/- (Rupees Two Crores Sixty-five Lakhs) and same shall be remitted to CPCB.

M/s Ultramarine & Pigments Ltd.

- The unit shall maintain ETP properly and also to take necessary steps to improve the performance of RO system.
- The unit shall arrest the leaks in kiln area as well as provide proper suction system in order to control the fugitive emission.
- The waste generated from kiln upgradation shall be stored in a closed shed and dispose properly with consent from TNPCB.

- The unit shall install flow meters at inlet of ETP, RO (Inlet, permeate & reject) and MEE (inlet & condensate) and same shall be connected to CPCB/TNPCB server to assess the ZLD system.

M/s Arjun Chemicals Pvt Ltd.,

- The unit shall install online TDS meter in the RO reject discharge as per consented condition.

M/s P A Footwear P Ltd., Unit-II

- The unit shall replace existing salzberg mechanical dryer system and upgrade to MEE system
- The unit shall provide proper drying area for the sludge & semi solid and dried solid shall be packed & stored in the closed shed.
- The unit shall connect all online flow meters to CPCB server also.

M/s. Ranipet SIDCO Finished Leather Effluent Treatment Company Ltd., (Phase 1)

- The CETP shall stop its construction activities, until identifying the sources of pollution.
- On identification of sources of pollution, remediation action shall be initiated and TNPCB shall impose the environmental compensation on the defaulter.
- The unit shall install ATFD system as per direction of TNPCB.
- The unit shall obtain valid HW Authorisation from TNPCB and also to incorporate for storage & disposal of chemical drums/barrels/containers/ bags.
- EC calculated by the committee for violation of HW Rules is Rs 2,25,000/- (Rupees two lakhs twenty five thousand) and same shall be remitted to CPCB.

M/s. SIPCOT & SIDCO Phase 2 Entrepreneur Finished Leather Effluent Company (P) Ltd.,

- The CETP shall expedite the upgradation of treatment system.
- CETP shall submit the action plan for removal & disposal of sludge to TSDF present in the SLF facility.

- CETP shall obtain valid HW Authorisation from TNPCB and also to incorporate for storage & disposal of chemical drums/barrels/containers/ bags.
- CETP shall connect all online flow meters to CPCB server.
- EC calculated by the committee for violation of HW Rules is Rs 1,68,750/- (Rupees One lakh sixty-eight thousand seven hundred fifty) and same shall be remitted to CPCB.

Consolidated Table (Environmental Compensation to be paid by the violating industries to CPCB):

S.No.	Name of Industry	Environmental Compensation
1	M/S. Malladi Drugs And Pharmaceuticals Ltd Unit-I	Rs.40,95,000
2	M/S. Malladi Drugs And Pharmaceuticals Ltd Unit-3	Rs.93,60,000
3	M/S. Sviss Labss Private Limited	Rs.2,65,00,000
4	M/S. Ranipet SIDCO Finished Leathers Effluent Treatment Co. Ltd,	Rs.2,25,000
5	M/S. SIPCOT - SIDCO Phase II Entrepreneur , Finished Leather Effluent Treatment Co. Pvt.Ltd.	Rs.1,68,750
6	M/S. Snap Natural And Alginate Products P Lt	Rs.10,00,000
7	M/S. Prestige International,	Rs.1,00,000
8	M/S. Standard Chemicals And Leathers,	Rs.1,18,000
9	M/S. Titan Leather Exports Unit Ii	Rs.1,00,000
10	M/S. Pioneer Leder Tex P Ltd	Rs.1,00,000
11	M/S. Vinyork Leather Works	Rs.1,00,000
12	M/S. Sri Thirumalai Leathers	Rs.1,00,000
13	M/S. Mahalakshmi International	Rs.1,00,000

10. Conclusions on Remediation of Chromium Contaminated Site at Ranipet, Tamil Nadu:

As per the terms of NCEF project scheme, Central funding for assessment and remediation of contaminated area was limited to 40% of the total project cost. The remaining 60% is to be met from State Government through Polluter Pays Principle/Public-Private Partnership/State support, etc. Government of Tamil Nadu State had given in-principle approval for funding State's share of 60%. The project for preparation of DPRs including TCCL contaminated area at Ranipet, Tamil Nadu was initiated in the year 2014. However, NCEF Project of MoEF&CC has been discontinued by Government of India. CPCB has completed DPR for remediation of chromium contaminated area at Ranipet, Tamil Nadu based on detailed site investigation including human health risk assessment studies. The DPR along with templates of bid document was forwarded to Government of Tamil Nadu and TNPCB for execution of remediation works.

Since the TCCL was operated by State government department and also by few private entities, funds for remediation may be apportioned to both TN State as well as the other responsible parties, who operated the plant.

As the current scenario in ground level remains same and pollution is being continued as the seepage from the chromium sludge dump yard is flowing to the surface as well as ground water bodies. Hon'ble Tribunal may direct the Govt. of Tamil Nadu to start up remediation work. Since the financial matter is involved, this issue may be taken up in the level of Chief Secretary, Government of Tamil Nadu constituting the monitoring committee for effective progress in the remediation work.

Timelines for implementation & cost estimated as per DPR is as follows:
The schedule of implementation of the selected remedial technology is subject to limiting field conditions. Assuming that the tasks are implemented without undue hindrance of any kind, the anticipated duration for each activity and the overall schedule for installation of the abstraction wells, and connection to the surface water treatment system are presented in Table below for the schedule associated with installation of the water treatment system.

Remedial Implementation Schedule – Groundwater

Anticipated Activity	**Sub-activities**	**Anticipated Duration (months)**
Installation of abstraction wells	Installation of abstraction wells	1
	Installation of conveyance piping	1
Installation of Treatment System	Procurement and Installation Instrumentation and Piping Testing and Commissioning	6-9
Operations	Long term monitoring of treatment system	15-20 years

Capital expenditure (CAPEX) is associated with drilling, installation of abstraction wells, and installation of the groundwater treatment system. The cost estimates as per DPR is presented below;

Estimated CAPEX

In total, the cost of installation of the abstraction system, and connecting it with the surface water treatment system is estimated to be Rs. 12 Crore.

Estimated Operating expenditure (OPEX)

Assuming the life of the treatment system to be fifteen (15 years), the OPEX is estimated to be Rs. 1.29 crore per month.

Since no progress made on implementation of remediation work even after finalisation of DPR, Hon'ble NGT shall directed the Govt. of Tamilnadu to implement the following;

i) Chief Secretary to review the matter periodically by constituting the State Level Monitoring Committee for effective monitoring & supervision of remediation work. The remediation work may be executed as per the DPR prepared by CPCB.

ii) Government of Tamilnadu shall recover a portion of the cost from the responsible parties/ owner of M/s TCCL. Until the recovery of the cost, the

remediation work shall be initiated by utilising the environmental compensation available with TNPCB.

iii) TNPCB shall prepare & submit PERT chart on execution of the work in consultation of the Chief Secretary.

iv) Remediation work may be executed as per authorization and supervision of TNPCB. TNPCB may also engage any competent consultant to monitor and verify the works.

v) CPCB may provide technical assistance and also verify the remediation works as and when required.

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Minutes of Meeting with SPCBs/PCC for compliance to the directions of Hon'ble NGT order dated 29.01.2021 in O.A. No. 804 of 2017 in the matter of Rajiv Narayan & Anr. Vs. Union of India & Ors; w.r.t Contaminated Sites in India held on 16.03.2021

In compliance of Hon'ble NGT order dated 29.01.2021 in O.A. No. 804 of 2017 in the matter of **Rajiv Narayan & Anr. Vs. Union of India & Ors**, regarding contaminated sites, a meeting with concerned senior officials of SPCBs/PCC was held through VC on 16.03.2021 to discuss the Action Plans. The meeting was chaired by Member Secretary, CPCB, Delhi.

Meeting was attended by Senior officials of SPCBs/PCC namely; Andhra Pradesh, Assam, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand & West Bengal and dealing officials of CPCB. List of participants is given at **Annexure-I.**

Initiating the meeting, Member Secretary welcomed the participants. The concerned Division in CPCB briefed the agenda of the meeting, and made a presentation on action points to comply with various directions passed by Hon'ble NGT for identification, assessment and remediation of contaminated sites.

Subsequently, Member Secretary, CPCB requested SPCBs/PCCs to present status on implementation of Detailed Project Reports (DPRs) prepared under NCEF Project. Points of discussion given below:

1. **Kerala:** There are 03 contaminated sites for which DPRs have been prepared and forwarded the same to Government of Kerala and Kerala SPCB for execution of Remediation works.

   a) With regard to execution of remediation works at Kuzikundam Thodu (Creak), Eloor; Kerala SPCB informed that tendering process is under way.

      In this regard, it was suggested that Kerala SPCB need to facilitate the Supervised Committee constituted by Hon'ble NGT (SZ) in OA No. 561 of 2018 in the matter of Shibu Manual Vs. Union of India & Ors. to expedite the entire process of remediation works in time bound manner.

   b) With regard to remediation of contaminated sites at Edyaar; Kerala SPCB was requested to issue direction to responsible party to initiate lifting and disposal of waste from the unlined jerosite ponds and execute remediation works as per the DPR. In case of failure to comply, as per the Hon'ble NGT order dated 26.08.2019,