BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,

Principal Bench, New Delhi

Original Application No. 64/2016 (WZ)

In the matter of: -

Akhil Bhartiya Mangela Samaj & Ors. Applicant(s)

Vs.

Maharashtra Pollution Control Board & Ors. Respondent(s)

Index

(Ajay Aggarwal)
Scientist-E
Central Pollution Control Board,
Parivesh Bhawan, East Arjun Nagar,
Delhi- 110032.

Date: 11.01.2021
Place: Delhi

Status Report of the Committee on Action Plan for remedial measures and restoration of contaminated water bodies in and around MIDC Tarapur and their compliance status in compliance with order dated 17/9/2020 of the Hon'ble National Green Tribunal in the matter of Original Application No. 64/2016 (WZ); Akhil Bhartiya Mangela Samaj & Ors. Versus Maharashtra Pollution Control Board & Ors.

1. Background

The Hon'ble National Green Tribunal (NGT) vide its order dated 17/9/2020 in the matter of Original Application No. 64/2016 (WZ); Akhil Bhartiya Mangela Samaj & Ors. Versus Maharashtra Pollution Control Board & Ors. directed as below:

"… 11. In view of the above, we direct that the reports of the Committee be acted upon and further steps taken for preventing damage to the environment and for its restoration. The restoration measures will include improvement of quality of environment as well as remedying the health of the inhabitants, including providing healthcare to the affected individuals. The amount assessed be recovered and if there is nonpayment, the statutory regulatory bodies will be free to take coercive measures, including closure of the polluting activities. The same be utilized for restoration of the environment in terms of an action plan.

12. The Committee already constituted will continue to function to oversee the remedial measures and will also include District Magistrate, Palghar. The nodal agency for coordination will be the CPCB and the District Magistrate. The Committee may prepare a restoration plan within one month. The timeline for execution should be as expeditious as possible. It will be open to the Committee to associate any other expert/institution and decide the mode of execution of the restoration plan. MPCB may, inter-alia, monitor water quality of creeks, water bodies in vicinity and ground water quality particularly of potable sources in use with reference to parameters relevant. The Committee may meet atleast once in a month and in case physical meetings are not viable, virtual meetings may be organized.

13. The Committee may give a status report of the steps taken after three months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.

The application stands disposed of except for consideration of the status report to be filed.

All pending applications will also stand disposed of.
List for further consideration on 11.01.2021."

Copy of the aforesaid order dated 17/9/2020 of the Hon'ble Tribunal is given at Annexure- I.

In order to comply with the aforesaid order of the Hon'ble Tribunal, the committee already constituted earlier with inclusion of District Magistrate Palghar held 07 meetings through video conferences during October-December 2020 on 1.10.2020, 8.10.2020, 22.10.2020, 5.11.2020, 19.11.2020, 4.12.2020 and 29.12.2020. The said committee including District Magistrate Palghar comprised of the following:

1. Dr. Manik Gursal, Collector and District Magistrate Palghar.
2. Prof. Chinmay Ghoroi, Indian Institute of Technology, Gandhinagar.
3. Prof. Anish Sugathan, Indian Institute of Management Vastrapur, Ahmedabad.
4. Shri Hemant Bherwani, Scientist, Director's Research Cell National Environmental Engineering Research Institute (NEERI) Nehru Marg, Vasant Nagar, Nagpur.
5. Shri D. B. Patil, Regional Officer, Navi Mumbai, Maharashtra Pollution Control.
6. Shri Bharat K Sharma, Regional Director, Regional Directorate, Central Pollution Control Board, Pune.

2. Preparation of Action Plan for remedial measures and restoration of contaminated water bodies in and around MIDC Tarapur

The aforesaid committee prepared an action plan for remedial measures as per the earlier report (which has been accepted by the Hon'ble Tribunal and directed to be acted upon vide the aforesaid order dated 17/9/2020) as well as remedying the health of the inhabitants, including providing healthcare to the affected individuals. The concerned agencies i.e. MPCB, MIDC, Zilla Parishad Palghar, Central Ground Water Authority Nagpur, and CETP operator (M/s TEPS-CETP) were asked to submit their action plan. The compliance status have been reviewed during the aforesaid meetings by the committee.

Continuation of non-compliance of the 25 MLD CETP and also lack of an effective action points/measures from the concerned organizations have been observed and the same have been raised by the committed several times until MPCB's revised action plan was discussed during the 05th meeting held on 04.12.2020. MPCB addressed the basic up-gradation/retrofitting plan of CETP and the other action points required to meet the inlet and outlet norm for CETP effluent including the other environmental restoration/remedial measures.

Action plan for controlling the further impact on environment due to partial/untreated effluent discharge and restoration/remediation of contaminated water bodies in and around MIDC Tarapur, as prepared by committee, is given in column no. 2 and 3 of the table given at Annexure-II. The same has been prepared in line with the recommendations made in the

committee's report accepted by the Hon'ble NGT and directed to be acted upon vide the aforesaid order dated 17.09.2020 of the Hon'ble NGT. The action plan on the prohibition of the use of contaminated ground water in affected areas and remedying the inhabitants' health, including providing healthcare to the affected individuals in and around Tarapur MIDC have also been prepared and given at Annexure-III and Annexure- IV respectively.

3. Status of works/remedial measures undertaken as per the Action Plan

All the aforesaid action plans given at Annexure- II, III and IV also outline action points and their compliance status by the corresponding agencies as on 28.12.2020 and following are the brief of works/remedial measures undertaken as per the said compliance statuses:

3.1 Control of further impact on environment due to partial/untreated effluent discharge

Based on compliance status, as reported by MPCB, as given at Annexure-II, the following works/remedial measures have been undertaken to control further impact on environment due to partial/untreated effluent discharge:

(a) One module of 12.5 MLD out of the 04 modules (50 MLD) of the new CETP has been commissioned w.e.f. 22/11/2020. About 1.5-8.4 MLD is being received to the new CETP which currently has pipeline connection for conveying effluent as inlet only through Sump 1 of the existing 04 pipeline connections (i.e. Sump 1, 3, 4 and Gravity Mains) used for conveying effluent to the old 25 MLD CETP.

(b) The 25 MLD CETP has voluntarily shutdown its operation for upgrading/retrofitting w.e.f. 26/11/2020 during which member units connected to this CETP also voluntarily closed their wastewater generation processes. The CETP is expected to start with 07 MLD effluent inlet from 30/12/2020. Details of water supplied and effluent generation and disposal of treated effluent are given at Appendix A.

(c) Reduction of water supply in MIDC Tarapur from 38 MLD to about to 25 MLD during the aforesaid volunteer shut down period of the 25 MLD CETP.

(d) Besides earlier on-going weekly monitoring by MPCB, daily monitoring of inlet and outlet of the 25 MLD CETP from 26/10/2020 up to 26/11/2020 (till the CETP was in operation) were carried out. Thereafter, samples have also been collected & analysed up to 07/12/2020. The analysis results are given at Appendix B.

(e) MPCB has deployed teams from 18/11/2020 for identification of units not complying with the CETP inlet effluent norms. 226 industries have been monitored so far.

(f) District Magistrate, Palghar, has issued order on 04.12.2020 under section 144 and 133 under the Criminal Procedure Code 1973, banning water tanker movement in Tarapur MIDC w.e.f. 05/12/2020 to 02/2/2021 except Fire Tender vehicles and in extraordinary situations with written permission from MIDC.

(g) Completed removal of deposited sludge from various CETP inlet and outlet sumps (Sump 1, 2 and 3) and module 1 (Equalization tank; Primary settling tank; Aeration Tank and Secondary clarifier) of the two modules of the 25 MLD CETP and common Collection tank and common Oxidation tank.

Further, for improvement in overall scientific operation and maintenance of the 25 MLD CETP works such as replacement of old SS-316 sluice gates within equalization tank inlet with new sluice gates; floating aerators to submerged mixers in collection equalization tank and scrapping system in primary floculators and secondary clarifiers with new SS-316 scrapping system, etc. have been completed in the 25 MLD. Other activities are proposed/under process such as installation of SCADA; development of facility to treat high COD and high TDS streams, up gradation of CETP, etc., as given at Annexure-II.

3.2 Restoration/remediation of contaminated ground water and drains and, if applicable, the two creeks (Navapur Dandi Creek and Kharekuran Murbe Creek) and seashore also

The committee's report, which has been accepted and directed to be acted upon by the Hon'ble NGT, outlines – (i) selection of consultant to prepare Detailed Project Report (DPR) and provide consultancy services for remediation of contaminated ground water and drains as well as control impact on the water bodies from the drains/CETP outlet for the Phase-I (detailed investigation, remediation plan, etc.) and Phase-II (execution as per the remediation plan) activities; (ii) execution as per the DPR; (iii) recovery of derived damage and restoration cost from the respective 103 polluting units (who have also been directed to pay the same vide order dated 17/9/2020 of the Hon'ble NGT) to meet the said expenses on remediation expenses. The compliance status given at Sl. No. 16 to 20 of the Table at Annexure-II reveal that:

(a) Work of finalization of IIT Mumbai as consultant is in progress by MPCB and has already discussed this issue in length with IIT and NGRI, Hydrabad.

(b) MPCB has issued the directions on 23/10/2020 to all 103 units for deposition of damage and restoration cost. One unit has deposited damage and restoration cost of Rs. 14.23 lakh. Initiation of necessary action against the 102 units is in progress by MPCB in the light of the Hon'ble Supreme Court order dated 14/12/2020.

(c) MPCB has decided to meet the remediation cost from the polluting units incase recovery of the damage and restoration cost from the units is delayed or not met partially or fully due to one or other reasons at any stage.

3.3 Prohibition of use of contaminated ground water in affected areas

(a) Ground Water Surveys and Development Authorities(GSDA) Palghar, and Sub-divisional Water Testing Laboratory carried out sampling and analysis of 86 water samples from Government marked bore wells or dug wells, and 535 water samples from private bore wells, of that 5 government and 61 private samples were found unfit for consumption due to iron and turbidity. Heavy metals were also tested in 10 randomly selected samples and were found within the prescribed limit for drinking water.
However, the committee observed that limited parameters were carried out during such sampling and analysis and various pollutants expected to be present in the ground water due to industrial activities of Tarapur MIDC were not carried out such as Ammonia, Phenolic compounds, PCB, Pesticide and PAH besides heavy metals.

(b) It was informed that the aforesaid 13 Grampanchayat and 16 village are having regional water supply scheme by MIDC for drinking purpose and it was also observed during their survey that the aforesaid sources are not used for drinking purpose and are used for domestic purpose like washing utensils, clothing, etc.

3.4 Remedying the health of the inhabitants including providing healthcare to the affected individuals of in and around Tarapur MIDC

(a) 16 villages (having 24,815 households with population of 91,016) have been identified which may potentially have health impact on the basis of representation received from applicant of the OA No. 64/2016 (WZ) i.e. Akhil Bhartiya Mangela Samaj to DM Palghar as affected villages.

(b) Training to 129 healthcare officials have been imparted for active and passive health survey, screening and specialist camp.

(c) 55,844 among the aforesaid population of 91,016 have been covered in house-to-house health survey conducted by District Health Officers/Taluka Health Officers. The rest population goes out for work and hence could not be covered in the survey. The following suspected persons have been surveyed:

(i) Skin infection = 361
(ii) Respiratory ailments = 100
(iii) Tuberculosis = 14
(iv) Suspected cancer symptoms = 21

(d) Health screening camps for the surveyed people (planned during December 2020 but could not be done due to other activities of National Programmes) will be arranged in 3rd week of January 2021. Thereafter, Specialist camp for follow up of screened /identifies patients will be conducted in the 4th week January or 1st week of February. Distribution of medicine and patients referral to tertiary healthcare centre will be carried out as per the requirement with effect from February 2021.

4. Recommendations

4.1 Control of further impact on environment due to partial/untreated effluent discharge

Although various works/remedial measures have been undertaken, as stated at para 3.1 above, w.r.t. the 25 MLD (old CETP) which is continuously non-compliant since the reported period from 2011 (as mentioned in the committee's report submitted to the Hon'ble NGT) but - (i) continued non-compliance of inlet and outlet effluent of CETP even after the aforesaid order dated 17/9/2020 of the Hon'ble NGT till its volunteer closure for up-gradation/retrofitting on 26/11/2020 (ii) not able to identify/list out units contributing to the higher hydraulic load and/or higher concentrated effluent to the CETP despite surveillance by separate teams of CETP and MPCB during such period, and; (iii) continued effluent discharge to CETP and discharge of effluent from CETP through sumps (though small in quantity of about 01-02 MLD) even during the said volunteer shut-down of CETP; reveal that there may be lack of system/arrangement to identify units who contribute higher concentrated effluent or higher hydraulic load to the CETP occasionally or continuously.

It is recommended that:

(i) resumption of the 25 MLD CETP expected from 30/12/2020 may not be allowed by MPCB unless – (a) CETP operator or MIDC (who conveys effluent from units to CETP) individually or collectively takes the responsibility that they have mechanism in place to identify and report non-compliant units in the event of every occasion of higher hydraulic load/effluent quality being received at the CETP, and (b) the CETP demonstrates compliance to the prescribed outlet norms.

(ii) If the CETP's volunteer shutdown continues, there is a need to assess supplied water (25 MLD) to MIDC Tarapur. Water intake/usage of individual units connected to the 25 MLD old CETP is to be correctly quantified (during the shutdown period) and compared with the water use pattern during normal operation period. MPCB should properly review the same.

(iii) environmental compensation of Rs. 14,70,000/- (Rupees Fourteen lakhs seventy thousand only), may be imposed (calculation details given at Annexure- V) on the 25 MLD CETP operator and collected by MPCB for violating the prescribed inlet/outlet effluent norms w.e.f. 17/10/2020 (as order dated 17/9/2020 of the Hon'ble NGT). Hon'able NGT has directed that the reports of the Committee be acted upon and the committee's report outlines. Accordingly, in case the suggested measures are not implemented effectively and CETP (either existing or new) continues to perform non-compliance to the inlet/outlet norms for a month, and that no alternate arrangement is in place for disposal of effluent, MPCB may close operation of CETP including its member units (who discharge their effluent to the CETP) till the compliance is achieved. Whereas the 25 MLD CETP continued the violations till the analysis reported period i.e. 07/12/2020 (except on 28/11/2020). MPCB didn't close the CETP and CETP continues to receive effluent and discharge the same till the reported period of 28/12/2020. MPCB need to take appropriate step as per the Hon'ble NGT order.

(iv) MPCB shall supervise generation of sludge and their proper storage and disposal including record maintenance during desludging of various sumps and treatment units/tanks of CETP in accordance with provisions of the Hazardous and Other Waste (Management and Transboundary) Rules, 2016.

(v) MIDC shall ensure that abandoned old effluent conveying pipeline system in Tarapur is not being used for illegal discharges of effluent. The same be dismantled in time bound manner for which action plan be submitted to MPCB.

4.2 Restoration/remediation of contaminated ground water and drains and, if applicable, the two creeks (Navapur Dandi Creek and Kharekuran Murbe Creek) and seashore also

There is need to expedite selection of consultant by MPCB to prepare Detailed Project Report (DPR) and provide consultancy services for remediation of contaminated ground water and

drains as well as control impact on the water bodies from the drains/CETP outlet for the Phase-I (detailed investigation, remediation plan, etc.) and Phase-II (execution as per the remediation plan) activities which has not been completed even after 03 months of order of the Hon'ble Tribunal.

The DPR preparation, detailed investigation/assessment, selection of remediation target level and appropriate remediation technologies and execution thereof will proceed only after selection of suitable consultant. MPCB shall, therefore:

(i) complete selection of consultant on priority within a month and proceed DPR preparation, detailed investigation/assessment, selection of remediation target level and appropriate remediation technologies and execution thereof, etc. as recommended in the committee's report.

(ii) proceed for recovery of the damage and restoration cost from the 103 units of the 102 units who have not yet deposited the same in accordance with order dated 17/9/2020 of the Hon'ble NGT and order dated 14/12/2020 of the Hon'ble Supreme Court.

4.3 Prohibition of use of contaminated ground water in affected areas

Although regional water supply scheme prevails in all the aforesaid 16 village and District Water and Sanitation Mission (DWSM) Palghar, has issued letters to BDO Palghar and concern Gramsevak for not to use the ground water for drinking purposes from the aforesaid 5 and 61 contaminated sources, however, for effective stoppage of use of drinking water from the contaminated ground water sources, there is need to;

(i) Issue order by Zilla Parishad to ban use of ground water for drinking purpose unless water samples are analyzed comprehensively with respect to parameter expected to be contaminated due to industrial activities of MIDC.
Advertisement in the local newspaper may also be issued in this regard as suggested by the committee in its 07th meeting held on 29/12/2020.

(ii) identify villages other than aforesaid 16 villages which may potentially have impact due to industrial activities of Tarapur MIDC by the GSDA Palghar based on aquifer recharging and ground water flow data and, if need be, similar remedial approaches, as above for the said 16 villages, be extended to the identified villages.

4.4 Remedying the health of the inhabitants including providing healthcare to the affected individuals of in and around Tarapur MIDC

(i) Advertisement about the on-going/ proposed house-to-house survey, health screening camp and specialist camp, etc. in the aforesaid 16 villages may be done in local newspaper.

(ii) Health impact due to legal discharge from Tarapur MIDC may be in other villages also other than aforesaid 16 villages which were selected as affected villages on the basis of application of the applicant i.e. Akhil Bhartiya Mangela Samaj to the District Magistrate Palghar. To begin with secondary health data from primary health centre/ sub-centre in and around Tarapur MIDC population may be analyzed by DHO and the on-going/proposed house-to-house health survey, health screening camps, specialist camp, distribution of medicine and patients referral to tertiary care healthcare centre, etc., be extended to the identified affected villages.

5. Conclusions

The committee has completed preparation of Action Plans on Control of further impact on environment due to partial/untreated effluent discharged and Prohibition of use of contaminated ground water in affected areas and Remedying the health of the inhabitants including providing healthcare to the affected individuals of in and around Tarapur MIDC and also overseen their implementation during seven meetings conducted by the committee during Oct-Dec 2020. Status of works/remedial measures undertaken as per the Action Plan and recommendations are given under paras 3 and 4 above.

The compliance statuses reveal satisfactory progress towards Prohibition of use of contaminated ground water in affected areas and Remedying the health of the inhabitants including providing healthcare to the affected individuals.

However, towards control of further impact on environment due to partial/untreated effluent discharge and Restoration/remediation of contaminated water bodies in and around MIDC Tarapur, there needs serious interventions including closure of the 25 MLD CETP as recommended under para 4.1 above. Since the action plan in this regard has already been prepared, the Hon'ble NGT may kindly consider further supervisions of the same under the Department of Environment, Govt. of Maharashtra, Department of Industries, Govt. of Maharashtra, and MPCB ensuring that concerned agencies effectively and expeditiously

enforce the action points, as deemed appropriate, as outlined in the action plan given at Annexure- II. These are the very urgent steps that require immediate attention. At the same time, MPCB needs to ensure no further tolerance to non-compliant/illegal effluent into or from CETP (old or the new CETP) or illegal discharge to the environment. .

(Dr. Manik Gursal)
Collector and District Magistrate Palghar

(Prof. Chinmay Ghoroi)
Indian Institute of Technology, Gandhinagar

(Prof. Anish Sugathan)
Indian Institute of Management
Ahmedabad

(Hemant Bherwani)
Scientist, NEERI, Nagpur

(D. B. Patil)
Regional Officer, Navi Mumbai
Maharashtra Pollution Control Board

(Rajendra Rajput)
Regional Officer, Thane
Maharashtra Pollution Control Board

(Bharat K Sharma)
Regional Director, Regional Directorate
Central Pollution Control Board, Pune

Item No. 02 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 64/2016 (WZ)
(M.A. No. 375/2017& I.A. No. 93/2020)

(With reports dated 18.06.2020 & 27.07.2020)

Akhil Bhartiya Mangela Samaj & Ors. Applicant(s)

Versus

Maharashtra Pollution Control Board & Ors. Respondent(s)

Date of hearing: 17.09.2020

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE S. P. WANGDI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Applicant(s):	Ms. Gayatri Singh, Senior Advocate and Ms. Meenaz Kakalia, Advocate
Respondent(s):	Mr. Devashish Bharuka and Mr. Amit Agashe, Advocates for R-3 and 9 Mr. Aman Bhalla, Advocate for CPCB Mr. Mukesh Verma, Advocate for MPCB

ORDER

1. This application seeks direction to close polluting industries discharging effluents in the Arabian Sea and a direction not to grant permission for new industries till CETP norms are complied. Further prayer is to issue direction for restoration of the ecology of the area, including marine life, clearing the sludge and preventing discharge of untreated effluent into the Navapur river. Other incidental directions have also been sought. The area in question is in the vicinity of Tarapur MIDC in Palghar District, on the outskirts of Bombay in Maharashtra.

The affected water bodies include Murbe creek running through Murbe till Mahagaon, Murbe-Satpati creek and the Navapur-Dandi creek. The villages affected include Tarapur, Kamboda, Ghivali, Uchchheli, Dandi, Navapur, Alevadi, Murabe, Kharekuran, Satapati, Shirganv, Wadarai, Tembi, Dadara, Mahimand Kelave.

2. The application was filed before the Western Zonal Bench of NGT in the year 2016 and after issuing notice to the concerned parties, orders were passed from time to time. It will be suffice to refer to the last order dated 26.09.2019 which sums up the issue before the Tribunal and by which an Expert Committee was constituted to assess the extent of damage to the environment, after giving hearing to the CETP operator and the alleged polluting units, represented by respondents 3 and 9. The amount assessed is to be utilized for restoration of environment. Reference was made to an earlier order of the Tribunal in O.A. 95/2018, *Aryavart Foundation v. M/s Vapi Green Enviro Ltd. & Ors.,* dealing with the grievance against pollution caused on account of deficiencies in another CETP in Vapi, Gujrat. The Tribunal also directed collection of interim compensation from the alleged polluting units as well as CETPs at the scale specified in the order. The operative part of the order dated 26.09.2019 is as follows:

> *"7. In Original Application No. 95/2018 in the matter of "Aryavart Foundation v. M/s Vapi Green Enviro Ltd. & Ors." in a similar situation prevailing in the Vapi Industrial Cluster, the Tribunal had passed certain directions. Considering the identical nature of the issues involved, we pass the following directions as in that case:*
>
> *(i) We direct constitution of following Committee to assess the extent of damage and cost of restoration of the environment and individual accountability of CETP and polluting industrial units:*
>
> *a) Representative of CPCB.*
> *b) Representative of IIM, Ahmadabad.*

c) Nominee of IIT, Ahmadabad.
d) Scientist nominated by NEERI.
e) Representative of GPCB.

(ii) The Committee may give its report within three months. The Committee will be entitled to take any factual or technical inputs in the manner found necessary. CPCB will be the nodal agency for the purpose. The Committee may also suggest steps for restoration of the environment.

(iii) The Committee may give hearing to the CETP operator and the units identified as polluting by the GPCB for which list will be furnished by the GPCB to the Committee indicating the period and nature of default within one month.

(iv) The GPCB may inform the defaulting units for compliance of this order.

(v) The GPCB may also consider exercise of its statutory powers of prosecution which power is coupled with duty.

(vi) Having regard to the entirety of the fact situation in the present case, we direct that, except for the green and white categories of industries, other category of defaulting industries connected to the CETP, shall deposit with the CPCB the following amounts towards interim compensation within one month:

a) Large Industries – Rs. 1 Crore each.
b) Medium Industries – Rs. 50 Lakhs each.
c) Small Industries – Rs. 25 Lakhs each.

(vii) The CETP on its part shall deposit a sum of Rs. 10 Crores with the CPCB towards interim compensation within one month.

(viii) The amount may be utilized by the CPCB for restoration of the environment.

(ix) The CPCB shall undertake jointly with GPCB extensive surveillance and monitoring of the CETP at regular intervals of three months and submit its report to this Tribunal.

(x) Copy of the order may be sent to CPCB by email and all reports in pursuance of the above directions be sent to this Tribunal at judicial-ngt@gov.in."

The typing error of GPCB in place of MPCB was directed to be corrected by a later order.

3. Accordingly, the CPCB has filed its report dated 18.06.2020 on behalf of the Joint Committee recording that there is damage to the environment. Deficiencies found include discharge of waste water beyond prescribed norms, absence of proper management of sludge, violation of parameters in inlet and outlet of the CETP, contamination of ground water. It is found that restoration measures are required. Each aspect has been discussed in detail. The CETP and the industrial units have been given hearing. We may reproduce the conclusions of the Committee:-

> ***"CONCLUSIONS AND MEASURES FOR RESTORATION OF THE ENVIRONMENT***
>
> ***8.1 PERFORMANCE OF CETP AND MEASURES REQUIRED***
>
> *The CETP Tarapur is* ***violating effluent discharge standards as well as CETP inlet design/inlet standards during the reported period of 28/4/2011 to 30/11/2019***[1]*. The CETP is not adequate to treat the effluent currently being received. Besides it is also operating at beyond its hydraulic load capacity of 25 MLD and resulting into the overflow from the CETP during such duration and such overflow effluent is being discharged into to drains leading to other water bodies (creeks, sea and ground water).*
>
> ***8.1.1 PERFORMANCE OF CETP*** *(details given under chapter 3)****:***
>
> ***8.1.1.1 Exceedance of parameters in previous sampling & analysis***
>
> *(a) The analysis results (samples collected at 1 to 5 occasions in a month) of MPCB of the past five years since the year of application filed in the Hon'ble NGT by the applicant during the said reporting period of 28/4/2011 to 30/11/2019*[1] *reveal that:*
>
> *(i)* ***COD and BOD has hardly complied with the CETP outlet standards prescribed under the Consent to Operate while SS has not continuously complied.*** *The average exceedances are more than 3, 10 and 2 times to the said standards*

[1] This reporting period has been considered by the committee for the purpose of its report only so as to limit the period taking reference from section 15(3) of the National Green Tribunal Act, 2010 as mentioned in Chapter 5 of this report.

respectively since 2011 (may refer Fig. 3.4 and Fig. 3.5 and Annexure III). pH and O&G show consistent compliance with the stipulated CETP outlet standards.

(ii) ***COD concentration in CETP inlet is not complying continuously to the design norms while BOD is also intermittently not complying since 2011*** *(may refer Fig. 3.4 and Fig. 3.5 and Annexure III). The average exceedances of COD and BOD are more than 2 times to the said design norms. SS, pH and O&G are complying with the CETP inlet design norms/standards.*

(b) The sampling & analysis carried out jointly by CPCB and MPCB at various occasions (refer Table 3.4) during the said reporting period also reveals that the CETP did not meet discharge standards.

(i) The concentration of COD, BOD, Ammonical Nitrogen, Phenols, TSS and TDS in CETP outlet exceed the outlet standard prescribed under the Consent to Operate in all the 02 samples. The same exceed more than 4 to 15 times, 5 to 47 times, 1 to 8 times, 1.4 to 20 times, 1.28 to 20 times and 40.5 to 100.8 times respectively to the said standards.

(ii) In the inlet effluent also, Ammonical Nitrogen exceeded the inlet standard prescribed under the Consent to Operate in all the inlet samples except in one sample. The same exceed more than 2 to 7 times the inlet standard. COD and BOD also exceeded 1.5 times and 1.3 times respectively in one of the samples.

8.1.1.2 Overflow from the CETP

Though there is no proper arrangement to measure CETP inlet effluent as the flow meter installed at post equalization tanks which may not measure the overflow from equalization tanks or before. However, based on data provided by the CETP operator, the ***monthly daily average CETP inlet effluent quantity has exceeded for 75 months than the designed capacity of 25 MLD*** *(refer Annexure IV). During such 75 months, the said average inlet to the CETP has been reported as 25.27 MLD having maximum monthly average daily inlet effluent quantity as 26.343 MLD against the said design of 25 MLD. This inlet overflow having high concentration of pollutants is discharged into the drains and leading to other waterbodies (creeks, sea and ground water).*

8.1.1.3 Exceedance of parameters during Sampling & Analysis carried out during the visit of the committee to CETP on 13/11/2019

The analysis results of various samples collected during the visit of the committee and analysed in MPCB laboratory reveals that (refer Table 3.9):

(a) *among the anaylsed parameters,* ***COD exceeds more than 9 to 11 times; BOD 39 to 45 times; TSS more than 4 times; Phenols more than 1 to 2 times to the CETP outlet standards prescribed under the Consent to Operate.*** *Further, Iron and Arsenic also exceeded more than 28 to 44 and 17 to 64 times respectively to the said standards.*

(b) BOD, COD and Phenols of influent is also exceeding more than 02 times, 1.6 times and 1.8 times respectively of the inlet design norm/standard.

8.1.1.4 Other observations made by the Committee during the visit on 13/11/2019

(a) ***The tertiary treatment (comprising Pressure Sand and Activated Carbon Filter) was observed to be defunct since long time****.*

(b) The inlet design norms of CETP are BOD: 1500 mg/l & COD: 3500 mg/l. However, with the present way of functioning of CETP comprising primary, secondary and defunct tertiary treatment (Sand & carbon Filtration), ***meeting of outlet standards (BOD: 30 mg/l, COD: 250 mg/l) prescribed by MPCB is not possible.***

(c) There were leakages from pipes & pumps and overflow of effluent from some units (equalization tanks/aeration tanks).

There was heavy smell of SVOCs/VOCs (solvents/chemicals) near the inlet sumps*. Inlet of CETP (with BOD: 3150 mg/l & COD: 5680 mg/l) indicating that member industries discharging their untreated/partially treated effluent to CETP without conforming the inlet design norms of CETP. There is no separate arrangement for high COD and high TDS effluent. Also, no arrangement for treating the refractory COD. Thus, the operation of CETP is not efficient to meet the prescribed norms.*

CETP is not designed for such high strength effluent. CETP has no proper mechanism in place for routine monitoring of individual defaulter member units.

(d) The flow meters and Online Continuously Monitoring System are not functioning consistently. The inlet flow meter has been provided after equalization tanks which may not take into account of overflow from or before of the equalization tanks.

(e) ***Significant quantity of sludge is deposited (approx.-2400 MT) in the MIDC Sump-2 (10.56 Million Liters- capacity) where treated effluent is collected and thereafter conveyed to the sea shore through BPTs. Overflow/leakages were also observed from this sump to nearby natural drain which meets with Navapur Dandi Creek and further to the Arabian Sea. CETP operator informed that the operation of this Sump is under MIDC and responsibility lies with MIDC for proper maintenance and removal of sludge from sump.***

(f) Inlet effluent quality standards are yet to be prescribed by MPCB for BOD & COD in the Consent of CETP as per MoEF&CC Notification dated 01.01.2016. The Consent stipulates that "Only for SSI units (having less than 25 CMD discharge effluent) BOD: 1500 mg/l and COD: 3500 mg/l is allowed and for rest of the industries, treated effluent as per their respective consents standards i.e. COD: 250 mg/l are allowed".

(g) MPCB has authorized 07 Metric Ton/Day as CETP Sludge in the Authorization dated 29/11/2019 under Hazardous Waste (M, H & TM) Rules, 2008 for treatment and disposal of Hazardous Waste. The quantum of sludge generation in the CETP is more than such specified quantity.

(h) The stock of sludge about 750 MT stored in the premises shows storage of the same beyond the prescribed storage duration stipulated under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. The same require to be disposed immediately to the CHWTSDF.

(i) ***CETP needs thorough up-gradation/revamping of its units/processes in terms of capacity, retention time, automatic chemicals dosing, scraping mechanism, aeration tanks, aeration capacity, de-sludging, transfer pumps & pipelines, removal of corrosion affected equipment/materials, decanters and its capacity, sludge drying beds, etc. Moreover, persons at CETP need to be more sensitized through constant follow up and training****.*

8.1.2 MEASURES REQUIRED

In view of consistent gross violation of the CETP w.r.t. influent flow and quality both exceeding the inlet design parameters; outlet effluent quality grossly exceeding the prescribed outlet standards; overflows from CETP to surroundings, and; CETP not adequate to meet the prescribed outlet standards; the following measures, most of which have also been recommended in the joint inspection report

of MPCB & CPCB submitted to the Hon'ble NGT by CPCB vide email dated Jan 02, 2020, are recommended:

1. ***Immediate measures:***

   (a) In order to control further impact on water bodies (Drains, Creeks and Sea), ***the capability of CETP be immediately assessed in terms of hydraulic load and inlet effluent quality that the CETP is able to meet the outlet norms (stipulated under the Consent to Operate by MPCB) as per the existing infrastructures. The said assessment studies may be carried out by MPCB through the expert institute.***

   (b) Based on the above assessment, the CETP shall receive only such limited hydraulic load and influent quality as prescribed in the said assessment. In order to ensure the same, the following may need to be enforced immediately after the said assessment and MPCB should constantly overview the activities of CETP:

   (i) MIDC to:

   a) Remove deposited sludge (approx.-2400 MT) in the MIDC Sump-2 (10.56 Million Liters- capacity) where treated effluent is collected and also from other sumps/tanks, if any.
   b) Ensure that the supply of water to MIDC Tarapur is so reduced (as compared to the current supply) and distributed that inlet quantity to CETP does not exceed the above prescribed CETP hydraulic load. Ensure that no overflowing/leakages from sumps/tanks etc. takes place during conveying the effluent to CETP or from CETP to seashore.
   c) ensure that no bore wells operate in MIDC Tarapur to ensure the CETP hydraulic load does not exceed.

   (ii) MPCB in association with CETP shall ***identify units not having adequate facilities to meet the aforesaid assessed CETP inlet effluent quality and such units be directed to segregate their high concentrated effluent and be stored separately at existing CETP or new CETP in case such storage is available at the new CETP or dispose of in Common TSDF Taloja for incineration. Such storage should not be allowed beyond 06 months. Storage and disposal of the same should be closely monitored by MPCB at regular intervals****.*

   (iii) CETP must also initiate actions to identify units who are discharging higher concentration effluent and/or higher effluent quantity to CETP and shall stop such units from discharging into CETP immediately. The same shall

immediately be reported to MPCB who may take actions in addition to closure of such units. The CETP should also develop round the clock surveillance mechanism to identify the member units discharging more than higher concentration at inlet of CETP.

MPCB shall also monitor CETP inlet and outlet effluent preferably on the daily basis.

In case if the above measures are not implemented effectively and CETP (either existing or new) continues to perform non-compliance to the inlet/outlet norms for a month, and in case no alternate arrangement is in place for disposal of effluent, MPCB may close operation of CETP and its member units who discharge their effluent to the CETP till the compliance is achieved.

2. CETP shall take all necessary measures to control the influent quality & quantity besides improvement in overall scientific operation & maintenance of CETP with trained manpower and adequate analytical facility to keep watch on operational parameters at every stage of operation on a regular basis.

3. ***There should be proper surveillance of all units and the penalty mechanism for the defaulter units to be derived by M/s TEPS –CETP for member industries in addition to inspections of MPCB to ensure that all the member industries discharge the trade effluent meeting the norms as per their consent****.*

In case of non-compliance observed during M/s TEPS-CETP monitoring surveillance, the list of defaulting industries should be provided to MPCB from time to time for necessary action against such units. MPCB should take stringent action against industries as found in surveillance of MPCB & TEPS including the recovery of environmental Compensation and prosecution of industries as per environmental laws.

4. There is urgent need of common facilities such as Common MEE and Common Spray Dryer for High COD and High TDS effluent and such types of effluent should be separately collected and transferred to common MEE and Spray Dryer facilities with identification of such industries. Similarly, there should be some advanced method (such as advanced oxidation, Ozonation etc.) to reduce the significant COD. CETP may ensure commissioning of the same at the earliest. Till the same is commissioned, high COD and high

TDS effluent be stored at suitable place in case available at the new CETP under commissioning stage, for not more than 06 months, otherwise such effluent be disposed in Common TSDF Taloja by incineration. Storage and disposal of the same should be closely monitored by MPCB at regular interval and operation of such violators be closed besides other necessary actions by MPCB.

5. SCADA system for monitoring quality and quantity of individual member industry be commissioned by the CETP operator in association with industries and MIDC within 04 months. MPCB may ensure timely commissioning of the same.

6. CETP shall regularly send the CETP sludge to CHWTSDF for proper disposal.

7. The 55 units of 1216 industrial units in MIDC Tarapur, which are not member of the CETP, may be examined by MPCB w.r.t. waste water generation from their processes. In case it is found that their processes generate wastewater, necessary action be taken by MPCB.

8. MPCB to review authorization of CETP in terms of sludge quantity.

9. CETP is also required to work upon housekeeping of entire premises with cleanliness, plantation, internal roads etc.

8.2.1.2 DAMAGE TO THE WATER BODIES AND RESTORATION STEPS

8.2.1 DAMAGE TO THE WATER BODIES *(details given under chapter 4)**:***

The samples collected from various water bodies (drains, creeks, sea beach and ground water) in and around water bodies during November-December 2019 and their analysis results reveal that ***ground water and drains are contaminated and there are impacts on creeks and seashores. Industries are discharging untreated effluent/solvent/chemicals to the drains of Tarapur MIDC. The polluted effluent from drains are received in creeks and finally to seashores. Seashore also receives effluent from the CETP not meeting to the discharge standards.***

8.2.1.1 Drains passing through Tarapur MIDC

Water in drains in and around Tarapur MIDC area is contaminated with elevated levels of TDS, BOD, COD, TSS, Fluorides and Phenols besides acidic water in one or more drains - when compared with

recommended screening standards for inland surface water in MoEF&CC's "Guidance document for assessment and remediation of contaminated sites in India". ***Further, odour and colour was also observed in drain waters. Dissolved oxygen was absent in four of the 09 monitored drains. These indicate that industries are discharging untreated effluent/solvent/chemicals to the drains****.*

Sediments were not exceeding screening levels prescribed in aforesaid guidance document, except for pH near M/s Everest Kanto which is highly acidic (where pH value was 2.34 at surface and 2.52 at depth of 30 cm from bed surface) indicating discharge of acidic effluent. pH of storm drain near Auro Lab was slightly basic having pH of 8.48 indicating discharge of basic effluent in the storm drain from industries.

8.2.1.2 Groundwater in and around Tarapur MIDC

High TDS and presence of BOD and COD in all the monitored ground water samples and presence of colour, odour, Chlorides, Fluorides, Sulphates, Total Ammonical Nitrogen, Metals (Lead, Copper, Iron and Manganese) in one or more samples of groundwater in and around Tarapur MIDC indicate that ***groundwater in and around Tarapur MIDC area has been contaminated due to the industrial activities.***

8.2.1.3 Creeks around Tarapur MIDC

The two creeks (Navapur Dandi Creek and Kharekuran Murbe Creek flowing North and South of Tarapur MIDC respectively) receiving polluted effluent from the drains of MIDC Tapaur were found having impact of discharges from such drains.

Elevated levels of COD and TDS at different stretches (where interference of water from Tarapur MIDC area begins). There was no DO in Creeks near Dumping ground (upstream of Navapur Dandi Creek) and Dandi Creek (downstream of Navapur Dandi Creek). Colour and odour were observed at different locations of the both the Creeks. Further, Phenols at downstream location of both the Creeks viz. Dandi Creek (downstream of Navapur Dandi Creek) and Murbe Creek (downstream of Kharekuran Murbe Creek) have been observed higher than other sampling locations of the Creeks and streams though the same are within the aforesaid standards.

8.2.1.4 Seashores around Tarapur MIDC

With regard to the seashores i.e. Navapur CETP outfall and Nandgaon, where the two creeks confluence into the sea, the results though do not reveal trend of elevated concentration of measured parameters near to Navapur CETP outfall beach and Nandgaon

beach, however, ***presence of Phenols in both the beaches indicate impact of discharge from Tarapur MIDC.***

8.2.2 RESTORATION/REMEDIAL STEPS

While measures for control of partially/untreated effluent from CETP has been outlined under para 7.1.2 above, there is need to remediate the contaminated ground water and drains as well as control impact on the two creeks (Navapur Dandi Creek and Kharekuran Murbe Creek) receiving discharges from the drains/CETP outlet.

8.2.2.1 Remediation Plan and implementation

As outlined in the "Guidance document for assessment and remediation of contaminated sites in India" prepared by the Ministry of Environment, Forest & Climate Change, Govt. of India, a detailed project report (DPR) for contaminated sites in and around Tarapur MIDC area needs to be prepared as Phase-I work which shall include delineation of the contaminated areas and areas needing remediation, detailed site investigation & characterization, risk assessment studies & identification of remediation goals/objectives and preparation of remediation plans thereof, selection of remediation criteria, outlining remediation options, preparation of detailed technical document with specifications for the selected remediation option. Further, investigation of sediments in drains and creeks are also necessary to rule out the need for remediation in sediments.

The above selected remediation plan needs to be executed by an agency. Therefore, in Phase-II, there is need to monitor and assess the remediation works being implemented in the field so as to ensure that remediation works are implemented as per the technical specifications and standards finalized under the aforesaid Phase I work. Besides, it is also required to prepare bid documents (RFP / tender documents, etc.) to identify the executing agency who shall execute the selected remediation plan.

It is recommended that the aforesaid steps of remediation may be implemented by MPCB identifying a consultant who may prepare the Detailed Project Report (DPR) and provide consultancy services for remediation of contaminated sites in and around Tarapur MIDC for the aforesaid two phases. ToR for selecting the consultant outlining scope of work, time schedule, consultant qualification and team, etc. is given at Annexure VI which may be helpful to MPCB in selecting the consultant and implementing the remediation work.

Till the remediation plan is implemented, ***use of contaminated ground water in effected areas of in and around Tarapur MIDC may be prohibited for drinking purpose by Central Ground Water Authority, MIDC and District Administration.***

8.2.2.2 Expenses to be met for implementing the above remediation plan

The cost to be incurred in the aforesaid activities of Phase-I and Phase-II in remediation may be met from the "Super Fund" for which initial amount of Rs. 75 Crore has been suggested to be met as damage and restoration cost from the 103 polluting units which is in addition to the damage cost to sea and wetland as has been described under the Chapter 6 and 7 of this report. Depending upon the selected remediation options, the cost of remediation may increase or decrease to that of Rs. 75 Crores. In such case, the amount may be collected or refunded to each of the said polluting units, as the case may be, in the same proportion as the damage recovery cost has been recommended to be paid.

In case recovery of the remediation cost from the polluting units is delayed or not met partially or fully due to one or other reasons at any stage, the Govt. of Maharashtra may initially incur such assessment and remediation cost and initiate the remediation activities such as allocation of fund, selection of consultant, etc., as outlined under (ii) above, initiate in a month in consultation with MPCB.

8.3 POLLUTING UNITS AND HEARING GIVEN TO THEM

In accordance with orders of the Hon'ble Tribunal, MPCB provided list of 221 defaulting units including the CETP in Tarapur MIDC as polluting units based on violation of discharge standards of individual units, discharge into storm water drain, drains passing through outside premises of the units, etc. and the actions taken i.e. Show-cause Notice, Closure Direction and other Interim/Proposed Directions issued under section 33 A of Water (Prevention & Control of Pollution) Act, 1974 since 28/4/2011. Hearing to the said listed units (of which 05 were absent) were given by the Committee during Nov 30 – Dec 03, 2019 where MPCB presented nature and period of violations. Representative of the respective unit was also given opportunity to submit records against such violations.

Based on observations made during the hearing, the committee requested MPCB to revise the list of polluting units as per recommendations of the committee (observations & recommendations details given at Chapter 5).

MPCB re-examined and identified 83 of the said 221 units as polluting units and another 20 units considering observations and recommendations of the committee for the purpose of imposing environmental compensation/damage restoration cost. MPCB also informed that the following recommendations of the committee were considered by MPCB in arriving 103 units as the polluting units:

(i) *Inclusion of only those units for which due records are available for establishing the violations;*

(ii) *Exempting SSI units (having effluent discharge less than 25 KLD) who were found discharging effluent to CETP meeting CETP inlet consent norms of COD-3500 mg/l and BOD 1500 mg/l;*

(iii) *Non-inclusion of violations which are not directly related to effluent discharge in to CETP or not causing damage to soil/ surface water/ground water;*

(iv) *Considering the period of default of five years since the date of making Original Application No. 64/2016 (WZ) i.e. 28/4/2011 to 26/9/2019 taking reference from section 15(3) of the National Green Tribunal Act, 2010, with regard to consideration of default for assessing environmental compensation and cost of restoration;*

MPCB also revised period of violations for the aforesaid 103 identified polluting units for the purpose of imposing environmental compensation as per recommendations of the committee that in cases where closure direction have been issued, the period of default (N in days) has been taken as date of inspection till the effective date of closure of the unit. For other cases including where conditional restart order issued under the Water (Prevention & Control of Pollution) Act, 1974/ Environment(Protection) Act, 1986, the period of default has been taken as number of days(N) for which violation took place. Such N has been taken as the period between the day of violation observed/ due date of compliance of directions and the day as on which the compliance was verified by MPCB. MPCB has only considered closure and conditional restart directions period. The period between effective closure of the unit till the date of restart order issued by MPCB has not been considered as violation period.

The aforesaid additional 20 units were called for hearing by the committee on 27/1/2020 where MPCB presented nature and period of violations to each of the units from records available with them and representative of the respective unit was also given opportunity to submit records against such violations. All the 05 units, who did not attend the hearing during Nov.30 - Dec. 04, 2019, and falling under the said list of 103 units were also called to attend the hearing giving them another opportunity. However, only 01 of the said 05 units attended the hearing on 27/1/2020 besides 03 of the said 20 units also did not attend the said hearing.

Notices were also served by MPCB to the 83 units (who were called/given the hearing earlier during Nov.30 - Dec. 04, 2019) on

28/1/2020 informing them to submit additional details, if any, by 31/1/2020. Replies received from 27 units of the said 83 units were examined by MPCB from the records available with them.

Thus, details of each of the 103 units (including CETP) identified as polluting units for the purpose of environmental damage cost/damage restoration cost along with nature and period of violation, prepared based on hearing given to them by the committee; recommendations of the committee; details submitted by the units to MPCB in support of compliance against the proposed violation details; vis-à-vis examination of records available at MPCB, as above, along with other details, as forwarded by MPCB, are given at Annexure V. Such unit wise details (given at Annexure V) have been used in deriving accountability of each of the 103 polluting units which includes the CETP also in terms of damage recovery cost in INR in meeting the estimated environmental damage cost and cost of restoration.

8.4 ENVIRONMENTAL DAMAGE COST AND RESTORATION COST

Environmental damage cost assessment has been done (as given in Chapter 6) for substandard effluent quality discharge from Tarapur CETP and industries into drains/coastal waters/drains. Approach of direct value transferred has been referred for assessment of environmental damage cost. The value transfer method has been used to calculate the economic value of benefits for the environment when an original study for valuation is not feasible. In order to estimate the damages done due to the discharge of pollutants to the Sea and the wetlands, the effluent discharge standard prescribed in consent issued by MPCB have been taken into consideration. The damage cost per kg of the load has been used for each standard exceeding pollutant (viz. COD, BOD and SS among the historic reported parameters) individually which is discharged in to the sea and the wetlands.

Environmental damage cost has been calculated within the aforesaid reporting period[2] of 28/4/2011 to 26/9/2019. The damage cost from the direct value transfer method is about 5.938 Crore INR for Sea and 79.014 Crore INR for wetlands considering inflation value. The above estimate is conservative as it only considers scope of damages due to effluent discharge beyond the standards on surface water wetlands. The impact on sea water pollution is also very conservative due to lack of better information on pollutants including nitrogen.

[2] This reporting period has been considered by the committee for the purpose of its report only so as to limit the period taking reference from section 15(3) of the National Green Tribunal Act, 2010.

However, it has been found that the ground water is contaminated in the region besides having impacts on creeks and coastal sea water due to illegal discharges of effluent from the industries/CETP, which have not been valued in the above damage cost assessment. Instead cost to be incurred in their further detailed assessment (including other water bodies) and their remediation have been accounted as "Super Fund" and the initial amount for the super fund has been suggested as 75 Crores INR which may increase or decrease depending upon the selected remediation options based on outcome of the detailed assessment and application of other tools as suggested under para 8.2.2.1 above.

The total environmental damage cost has, therefore, been estimated as 85.042 Crore INR (79.014 + 5.938 Crore INR) and with creation of super fund having initial deposit of Rs. 75 Crore INR as environmental restoration cost.

Therefore, the total estimated environmental damage and restoration cost comes out to be 160.042 Crore INR.

8.5 ACCOUNTABILITY OF POLLUTING UNITS INCLUDING CETP IN MEETING THE ENVIRONMENTAL DAMAGE COST AND RESTORATION COST

Polluter Pay Principal and the methodology recommended in "Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund" have been used adding some additional features to meet objective of deriving accountability of each of the identified polluting units including CETP. The used methodology (details given in Chapter 7) gives distributed accountability among each of the identified 103 polluting units in terms of damage recovery cost in INR in recovering the estimated environmental damage cost and restoration cost of 160.042 Crore INR in terms of their respective pollution index depending on pollution hazard, scale of operation, load factor based on the population located around the industrial unit, number of days for which violation took place and also considering deterrence for repeat/habitual violators.

The said damage recovery cost along with the corresponding Distributed Recovery Cost (DRC) Factor, derived as above, for each of the 103 polluting units including CETP is given at Sl. No. 16 of the respective tables given at Annexure V.

The range of such accountability as damage recovery cost for meeting the said environmental damage cost and cost of restoration comes out to be 0.887 Lakh INR (to a SSI unit who has reported violation period of 14 days with no repeat violation) to 1042.241 Lakh INR (to a LSI unit having first violation for a period of 482

days, first repeat violation of 1150 days, second repeat violation of 58 days and third repeat violation of 309 days).

The accountability of the CETP comes out to be 7231.470 Lakh INR as damage recovery cost for meeting the said environmental damage cost and cost of restoration.

*As suggested in Chapter 6, of the 160.042 Crore INR, 75 Crore INR may be deposited in "Super Fund" and in case based on the detailed assessment and selection of remediation options, the assessment & remediation cost exceeds or comes out to be lower than the 75 Crore INR deposited in the super fund, the additional amount may be deposited or returned back to that of the damage recovery cost to each of the polluting units, as the case may be, proportionate to that as has been recovered. The amount to be deposited or returned back to each of the 103 polluting units may be arrived by multiplying their respective "Distributed Recovery Cost (DRC) Factor" (given for each of the polluting units at Sl. No. 14 in their respective table at Annexure V) and the said increased or decreased amount to that of 75 Crore INR, as the case may be, as used in Equation (4) in Chapter 7.***"***

4. Second joint inspection Monitoring Report has been filed by the CPCB on 27.07.2020 mentioning the steps taken after the earlier inspection and holding that there was continuous violation of environmental norms with the following conclusions and recommendations:

"9. CONCLUSIONS:

The analysis results of various effluent samples of CETP collected during the joint inspection-cum-monitoring on 12/3/2020 and various observations made under preceding paras reveal that no improvement has been made by the CETP operator to upgrade or improve performance of the CETP since the previous joint inspection conducted on 13/11/2019 except that of on-going de-sludging activities in Sump No. 2.

Therefore, the gross violations, also reported in earlier joint inspection report conducted on 13/11/2019, continue to be occurring in CETP operation as below:

(a) Continued Non-compliance of CETP Inlet Effluent Quality with the Design Norms/Prescribed Limits

BOD and COD in CETP inlet effluent are exceeding 1.6 and 2.4 times the inlet design norms respectively; Phenol and TAN exceeding 1.6 and 5.5 times respectively and pH is 3.3 against the range of 6-9 prescribed under the Consent to Operate.

Each of the three inlet effluent sources to the CETP (viz. from MIDC Sump 1+ Gravity; MIDC Sump-3, and MIDC Sump-4) are also exceeding the aforesaid parameters in terms of respective CETP inlet design parameters/limit prescribed under the Consent to Operate and the effluent from MIDC Sump-3 contribute maximum exceedances among the three sources. (details given under para 3(a) of this report)

(b) Continued Non-compliance of CETP Outlet Effluent Quality with the Prescribed Limits

BOD, COD, TKN, TAN and Phenols in CETP outlet effluent are exceeding 48.3, 16.6, 9.9, 3.7 and 1.7 times respectively than the outlet limit prescribed under the Consent to Operate (details given under para 3(b) of this report)

(c) Continued exceedance of Hydraulic Load of CETP to the Design/Prescribed Limit and illegal Discharges

CETP is consistently not complying with design/consented capacity of 25 MLD and receiving excess effluent by about 3 MLD to the said capacity. The excess 3 MLD is being discharged into the adjacent storm water drain (originating from plot No. E-13 and further meeting into Navapur-Dandi creek through Salvad village).

Further, about 13 MLD of the CETP outlet effluent not conforming to the prescribed standard is also discharged through the said storm water drain into the Navapur-Dandi Creek violating to the consent condition that treated CETP effluent to be disposed at the designated Marine outfall point.

Other overflow from Sump No. 3 (used to pump the effluent to CETP) also occurs intermittently and the same flows into the drain originating at Plot No. N-27, MIDC Tarapur and meeting to Murbhe-Kharekuram creek.

The above overflows may be causing further damages to the waterbodies which have been reported along with remediation measures in the report of the Committee submitted to the Hon'ble NGT vide email dated 19/6/2020 in compliance with orders dated 26/9/2019 read with order dated 22/10/2019 in the matter of Original Application No. 64/2016 (WZ); Akhil Bhartiya Mangela Samaj & Ors. Versus Maharashtra Pollution Control Board & Ors.

(details given under para 3(c) of this report)

(d) Poor CETP Sludge Management and inconsistency in CETP Sludge Generation

Inconsistency in CETP sludge sent to common Hazardous Waste Treatment, Storage and Disposal Facility (CHWTSDF), Taloja, indicates that ***either CETP is not operated uniformly/regularly or there is wide variation in CETP inlet effluent quality or sludge is not sent to the CHWTSDF regularly.***

Further, ***there is poor management of sludge drying beds and sludge was found indiscriminately scattered in areas across Sump No. 2, Equalisation Tank and Sump No. 4 which may be because of overflows or poor management of sludge.***

(details given under para 3(d) of this report)

(e) Continued Improper Operation of all Major Treatment Units of CETP & Sludge Depositions

None of the major treatment units of the CETP (viz. Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier and Hypo-chlorite Oxidation Tank) are functioning properly whereas ***Pressure Sand Filter and Activated Carbon Filters are completely defunct. Further, there could be sludge accumulation in equalization tank and aeration tanks due to poor operation.***

(details given under para 4 of this report)

(f) Continued Improper CETP Inlet & Outlet Flow Meter Measurement and Non-operational Online Continuous Monitoring System

Online continuous monitoring system (OCMS) provided at CETP inlet and outlet are not in operation and in working condition. The flow meters provided as CETP inlet and outlet effluent measurement are installed at in appropriate places and, hence, not representing actual inlet and outlet flows.

(details given under para 5 of this report)

(g) Other Observations

- *Updated information such as waste water handled, hazardous waste generated and sent to common TSDF, etc. are not being displayed in the display board (installed near entry of the CETP) as per the Hon'ble Supreme Court's order in WP(C) 657/1995 and Hon'ble NGT order in OA 804/2017*
- ***A bore well is installed within the CETP premises without having requisite permission from concerned authority.***
- *About 102 M.T. and 10 M.T. of sludge are accumulated in sump No. 3 and Sump No. 4 (used for effluent inlet to CETP) occupying 60 % & 23 % of the sump capacity respectively. The same needs to assessed and removed.*

- *The Consent to Operate and Authorisation dated 24/12/2019 have been issued by MPCB to the new CETP at Plot No. OS-30(pt), MIDC Tarapur, for 25 MLD of the proposed 50MLD. B.*
  (details given under para 6 of this report)

10. RECOMMENDATIONS:

In view of the consistent gross violation of the CETP w.r.t. quantity and quality both exceeding the CETP inlet design/standards parameters; outlet effluent quality grossly exceeding the prescribed outlet standards; significant illegal discharges of high concentrated effluent as overflows which may be causing further damages to the already damaged/affected waterbodies; etc., the recommended immediate and other measures in the report of previous joint inspection conducted on 13/11/2019 and submitted to the Hon'ble NGT vide email dated 02/1/2020 may be implemented.

Such measures outline various actions to be taken by CETP operator; MIDC and MPCB w.r.t. CETP assessment in terms of hydraulic load and inlet effluent quality; limiting the CETP inlet effluent as per the said assessment; removal of deposited sludge in various Sumps and tanks of CETP; non-operation of any bore wells in MIDC Tarapur; no overflowing/leakages from pumps/tanks etc.; identification of units discharging higher quantity and/or higher concentration effluent and/or higher quantity effluent to CETP and stopping the same; segregating high concentrated effluent; surveillance & penalty mechanism with recovery of environmental Compensation and prosecution of industries; improvement in overall scientific operation & maintenance of CETP; need of common facilities such as Common MEE and Common Spray Dryer for High COD and High TDS effluent; replacing underground drainage (from industrial premises to the MIDC drainage sump/pipeline) with over ground pipeline along with SCADA system; etc. including closure of the CETP in case the immediate measures are not implemented within Jan 31, 2020.

Copy of the said recommendations as recommended in the report of previous joint inspection conducted on 13/11/2019 and submitted to the Hon'ble NGT vide email dated 0211/2020 is given at Annexure VII. The same may be enforced by CETP operator; MIDC and MPCB on priority and time bound manner including taking actions against other non-compliance observed in this inspection viz. updating information on the display board installed near gate of the CETP, installation of proper flow meters, making OCMS operational by the CETP operator and sealing the bore well at CETP and desludging Sump No. 3 and 4 by MIDC.

Though MPCB has taken actions as outlined under pare 8 of the report but enforcement of the same needs to be expedited."

5. I.A. No. 93/2020 has been filed by Respondent Nos. 3 and 9 raising objections to the above reports of the Committee. The objections are set out as follows:

> *"8. That the Applicants are, without prejudice to their right to contest the correctness of the findings contained in the said Reports by filing a detailed reply/ counter with the leave of this Hon'ble Tribunal, are submitting preliminary objections and comments to the said Reports, as under:*
>
> *(a) The Report dated March 2020 is based on perfunctory investigation and relies on old/ historic and incorrect data pulled in from database of MPCB. The relevant and current data has not been collected and hence, not taken note of.*
>
> *(b) The Committee has turned a blind eye to an unfair discretion used by MPCB in preparing alleged list of polluting units, on the basis of old data and for lack of availability of data of SSIs and many other units. The alleged final list of polluting industries as provide by MPCB, is manifestly arbitrary, irrational and prepared in a discriminatory manner (Reference — Chapter V Internal Page 59 to 62 of the Report dated March 2020).*
>
> *(c) The Committee has neither done any new sampling nor has it carried out any field investigation as of today for verifying or ascertaining sources of effluents or sources from where the CETP is receiving alleged excess effluent load. The methodology applied by the Committee has thus vitiated the very purpose of the constitution of the Committee as a fact finding body.*
>
> *(d) The Committee, relying on sole discretion of MPCB has excluded and exempted about 88% of the industries (including SSI and ZLD units) plus 55 non-member industries and also units in respect of which no data is available with the MPCB from any responsibility and has the placed entire burden onto less than 12% of the industrial units at Tarapur MIDC and the CETP managed by TEPS for the alleged environmental damage and restoration costs, which is neither legal nor acceptable for cause of environment protection (Reference Chapter V of the Report dated March 2020 read with Fig. 2.2 on Internal Page 7 read with 8.1.2 Para 7 on Internal Page 90 of the Report)*
>
> *(e) The Report is prepared in breach of fundamental principles of natural justice. There was no real opportunity of hearing provided by the Committee to the representatives of the industrial units, which were arbitrarily identified as polluting units. The oral/ written representation made by these units has been totally ignored by the Committee and does not find any place of consideration in the entire Report;*
>
> *(f) The Report fails to consider new technologies implemented by the industries including setting up of their own ETPs/STPs,*

and investments made in taking various measures such as forestation drives, installing additional technologies for effluent treatment in their ETPs/ STPs, all for the cause of environment protection.

(g) The Report further ignores JVS (Joint Vigilance Sample) Reports, and compliances made by the industries from time to time, which were duly verified by MPCB.

(h) Imposing alleged environmental damage and restoration costs without providing evidence of any actual environmental damage at the subject MIDC location, is in itself illegal and strongly objected by the industries and their association at Tarapur.

(i) The methodology applied for calculating alleged damage and restoration cost is neither recognized nor legal nor correct. The period considered for fixing alleged individual liability is grossly erroneous. The Committee has also ignored past penalties paid by the industries and bank guarantees forfeited by the regulators for recovering compensation for alleged environmental violations/ non-compliances and has quantified the alleged damages and costs for the same period, causing double jeopardy and violating established principle of law that no person can be penalized twice for the same offence.

(j) Despite identifying list of total 14 natural and storm drains flowing through MIDC at Tarapur receiving sewage and human waste from five different villages surrounding the MIDC area, no efforts are made by the Committee to actually measure the impact/ contribution percentile of this sewage mixed in MIDC sewage disposal lines and its weightage impact on the sea waters or any other water bodies/ ground water etc.. (See Table 2.3 and Figure 2.3 on Internal page 9 and 10 of the Report)

(k) The Report does not bring forth evidence of any actual environmental damage to the water bodies and instead focuses on academic assessment of the same only for purpose of quantification of damages and restoration costs and placing accountability of the same on select industries which is done using theories/ formulae having no recognition in the eyes of law nor does the Report cites any precedents in which such assessment has ever been recognized by this Hon'ble Tribunal or any other Courts or Tribunals in India.

(l) The Report is totally unfair and biased against the industry. The Committee is suspiciously silent on role of MPCB (contesting Respondent No.1) and MIDC (contesting Respondent No.2), of their past and continued failure and breach of duties, as also vehemently pleaded by Akhil Bharatiya Mangela Samaj (original Applicant) in 0.A. No. 64 of 2016 and also as pleaded by TEPS (Original Respondent No.3) in M.A. No. 375 of 2017 which pleadings and

submissions are pending for consideration of this Hon'ble Tribunal;

(m) The Committee for the reasons best known to it, has totally ignored completion of the state-of-art 50 MLD (million liters per day) capacity new CETP plant constructed and installed by the Applicants and member industries by investing in excess of Rs.150 Cr. The Committee is further silent on the fact that said new 50 MLD CETP Plant, once commissioned in addition to existing 25 MLD plant will be able to treat up to 75 MLD of load, which is by far more than double the capacity of actual requirement of Tarapur Industrial cluster;

(n) The Committee has erred in not considering the fact that the said new 50 MLD plant is ready to be commissioned immediately on completion of the work of laying a discharge/ disposal line by MIDC (Respondent No.2) which is pending for more than 4 years due to lackluster approach and inactions of MIDC.

(o) The Committee has not mentioned the new 50 MLD plant in the chapter dealing with remedial measures, knowing that investment already put in by the industries will have to be factored in and alleged remedial costs and super fund that the Report recommends shall be wiped-off and/or drastically come down;

(p) The Committee has not provided any logical reasoning, or actual calculations or quantification as to how it arrived at and made a provision for 'Super Fund' of INR 75 Crores and how such fund shall be utilized;

(q) The Committee has irrationally held the Applicant TEPS damage and restoration costs, though 'TEN has taken every possible measure in its capacity to deal with the effluent load at the existing CETP plant. The Committee has intentionally ignored the fact that additional effluent load, if any received by CETP beyond its treating capacity is not the failure/ violation of the TEPS but is failure attributable to the regulators i.e. MPCB and MIDC who have total controlling powers to decide issuance of consent to operate, permitting expansion of industries, controlling supply of water etc. Despite this, Committee has for reasons unknown and possibly due to the influence and role of these statutory bodies, have refused to hold them responsible and accountable for alleged environmental damage at Tarapur, which in itself exposes false, irrational, arbitrary and discriminatory nature of the Reports submitted by the Committee.

(r) The Applicants further state that the Reports seem to be full of contradictions. First of all, there is no conclusive evidence in the entire Report of any actual environmental damage. Except for vague statements about restoration measures, Report does not lay any definitive roadmap for protection of environment at Tarapur. Also, the Report has not appreciated water pollution

in terms of still or river water vis-a-vis flowing/tidal sea water and its long-time impact. Instead, these Reports are solely focused on quantifying and collecting money under the pretext of penalties, alleged restoration costs and creating alleged 'super-fund'. The contents of the Reports have no correlation with subject matter involved in the present original application and is unlikely to assist this Hon'ble Court in properly adjudicating this case."

A letter has been filed by the Maharashtra Organo Metallic Catalysts Pvt. Ltd. objecting to the report on similar lines.

6. We have heard the learned Counsel for the applicant, the CPCB, the MPCB, the CEPT operator, respondent No.3 and the Tarapur Industrial Manufacture Association, Respondent No. 9.

7. At the outset, learned Counsel for the Respondent Nos. 3 and 9 have referred to orders of the Hon'ble Supreme Court dated 18.11.2019 in Civil Appeal No. 8539/2019, *Tarapur Environment Protection Society v. Akhil Bhartiya Mangel Samaj & Ors.* and order dated 18.12.2019 in Civil Appeal No. 9409/2019, *Tarapur Industrial Manufacturers Association v. Akhil Bhartiya Mangela Samaj Parishad & Ors.,* staying the interim order of this Tribunal dated 26.09.2019.

8. As against above, the stand of learned Counsel for the Applicant, the CPCB and the State PCB is that the said orders being only qua interim compensation, there is no bar to hearing of the matter and further orders being passed. Our attention has been drawn to para 1 of the memo of appeal in Civil Appeal 8539/2019 as follows:-

"*That the present Civil Appeal is directed against impugned interim order dated 26.09.2019 passed by the Hon'ble National Green Tribunal Principal Bench New Delhi in Original Application No. 64 of 2016 (WZ)* ***whereby, the Hon'ble Tribunal has imposed a penalty of Rs. 10 crores as interim compensation to be paid***

by the appellant herein who manages and operates the 25 MLD CETP in Tarapur Industrial area.”

9. We find merit in the contention raised on behalf of the applicant, the CPCB and the MPCB that the grievance raised before the Hon’ble Supreme Court is only against interim compensation and there is no stay against proceedings before this Tribunal for enforcement of environmental norms on consideration of the reports of the Expert Committee constituted by the Tribunal. We thus proceed to deal with the reports of the Committee.

10. We find that the reports of the Expert Committee have taken into consideration all relevant data after visit to the site and have considered the view point of the CETP operator and the Association of the industries. We do not find any reason to reject the report and the conclusions and recommendations therein. Application of ‘Precautionary Principle’ which is part of ‘Sustainable Development’ requires anticipatory action and scientific certainty before taking such remedial action is necessary, once an Expert Committee has found that there is continuous violation of environmental norms causing harm to the environment and health. Credentials of the Committee members and their expertise on the subject is beyond question. We do not find any merit in the objections of the contesting CETP and industries which will stand rejected and the report of the Committee is thus, accepted.

11. In view of the above, we direct that the reports of the Committee be acted upon and further steps taken for preventing damage to the environment and for its restoration. The restoration measures will include improvement of quality of environment as well as remedying the health of the inhabitants, including providing healthcare to the affected

individuals. The amount assessed be recovered and if there is non-payment, the statutory regulatory bodies will be free to take coercive measures, including closure of the polluting activities. The same be utilized for restoration of the environment in terms of an action plan.

12. The Committee already constituted will continue to function to oversee the remedial measures and will also include District Magistrate, Palghar. The nodal agency for coordination will be the CPCB and the District Magistrate. The Committee may prepare a restoration plan within one month. The timeline for execution should be as expeditious as possible. It will be open to the Committee to associate any other expert/institution and decide the mode of execution of the restoration plan. MPCB may, inter-alia, monitor water quality of creeks, water bodies in vicinity and ground water quality particularly of potable sources in use with reference to parameters relevant. The Committee may meet atleast once in a month and in case physical meetings are not viable, virtual meetings may be organized.

13. The Committee may give a status report of the steps taken after three months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.

The application stands disposed of except for consideration of the status report to be filed.

All pending applications will also stand disposed of.

List for further consideration on 11.01.2021.

A copy of this order be forwarded to CPCB, IIM, Ahmedabad, IIT, Ahmedabad, NEERI, MPCB and the District Magistrate, Palghar by e-mail for compliance.

Adarsh Kumar Goel, CP

S. P. Wangdi, JM

Dr. Nagin Nanda, EM

September 17, 2020
Original Application No. 64/2016 (WZ)
(M.A. No. 375/2017& I.A. No. 93/2020)
SN

Annexure-II

Action Plan and corresponding action points on remedial/restoration measures by various executing organisations on control of further impact on environment due to partial/untreated effluent discharge and restoration/remediation of contaminated water bodies in and around MIDC Tarapur in accordance with order dated 17/9/2020 of the Hon'ble NGT in the matter of OA No. 64/2016

Sl. No (1)	Action points as recommended in the Committee's report for remedial measures/restoration of environment (2)	As per the committee report and order of the Hon'ble NGT (3)		Information to be provided by MPCB after reviewing and in consultation with MIDC and CETP operator (except for Sl. No. 18 and 19) (4)			
		Time Target (i)	Responsible Agency (ii)	Various activities proposed to meet the Action Plans as at Column (i)	Executing agency (ii)	Proposed time target (iii)	Compliance status as on 28.12.2020 (iv)
Control of further impact on environment due to partial/untreated effluent discharge							
1	In order to control further impact on water bodies (Drains, Creeks and Sea), the capability of CETP be immediately assessed in terms of hydraulic load and inlet effluent quality that the CETP is able to meet the outlet norms (stipulated under the Consent to Operate by MPCB) as per the existing infrastructures. The said assessment studies may be carried out by MPCB through the expert institute.	**Immediate**	**MPCB**	Due to sludge deposition in various treatment tanks, current hydraulic load of CETP has been assessed as about 07 MLD with COD<3500mg/l; BOD 1500 mg/ltrs. The hydraulic load capacity will be resumed to 25.0 MLD based on progress of desludging and revamping of all units including bioreactor.	**CETP and MPCB**	19/11/2020	Complied. Completed the said assessment by 19 Nov.2020.

2	Based on the above assessment, the CETP shall receive only such limited hydraulic load and influent quality as prescribed in the said assessment. In order to ensure the same, the following may need to be enforced immediately after the said assessment and MPCB should constantly overview the activities of CETP:						
	(i) MIDC to: a) Remove deposited sludge (approx.-2400 MT) in the MIDC Sump-2 (10.56 Million Liters- capacity) where treated effluent is collected and also from other sumps/tanks, if any.		**MIDC**	Removal of deposited sludge from Sump 2	**CETP**	June 2020	Complied. Desludging of sump-2, started on 01.04.2020 and completed on 16 June-2020. About 5700 Metric Tons (MT) of sludge has been removed and disposed to CHWTSDF.
				In addition to Desludging of sump-2, MPCB identified requirement of Desludging of Sump-3 and other units of CETP (where there is accumulation of sludge) for efficient operation of CETP. Action plan of the same are as below;			
				Removal of deposited sludge from Sump **3**	**CETP**	05/12/2020	Complied. Desludging Work completed on 03/12/2020 by stopping water supply during 28.11.2020 to 30.11.2020so as to prevent the generation of effluent from industrial units connected to sump-3.

				Module wise Desludging of the following units comprising of each module of the two modules of CETP in phased manner. A. 02 Equalization tank (ET) (3000 Cubic meter x 2 Nos) B. 01 Primary settling tank (PST)- 1450 Cum C. 01 Aeration Tank (AT)= 12256 Cum D. 01 Secondary clarifier (S.C.) = 1950 Cum	**CETP**	30/11/2020 (for one of the two modules of CETP) 25/12/2020 (for the remaining modules of CETP)	Desludging of the said units as module- 1 of the CETP completed on 30/11/2020. About 3000 Cubic meter (approx. 1250 MT) sludge has been de-sludged and 563 MT sludge has been sent to CHWTSDF and remaining about 680 MT is drying at the site which will also be sent to CHWTSDF. Work of Desludging of other module started on 30/11/2020 and is in progress.
				Desludging of common units in the two modules of the CETP after completion of Desludging work of aforesaid one module due to restriction in movement of equipment because of the said ongoing work; a) 01 Common collection tank (1000 Cum) b) 01 common Oxidation tank (1000 Cum	**CETP**	05/12/2020	Complied.

				Revamping of Pressure Sand filter (PSF) - 02 Sets (including conversion of ACF into PSF) in each of the two modules of the CETP.	**CETP**	25/12/2020 (for 1st module of the CETP). 10/01/2021 (for the remaining module)	Completed for 1st module of the CETP. For the 2nd module, media replacement work completed and work of tale end piping is under progress.
				Commissioning of flow meters at Sump no. 3, 4 and Gravity main within the premises of CETP which are inlets of the CETP.	**CETP**	12/12/2020	Flow meters installed and commissioning work are in progress which will be completed by 10/1/2021.
				Commissioning of another flow meter at Sump-1 which is the only inlet to the new CETP	**CETP**	15/12/2020	
3	c) Ensure that the supply of water to MIDC Tarapur is so reduced (as compared to the current supply) and distributed that inlet quantity to CETP does not exceed the above prescribed CETP hydraulic load.	**Immediate**	**MIDC**	**Of about 26 MLD earlier effluent inlet to the old CETP; about 09+02 MLD would be diverted to new CETP from Sump-1 and 07 MLD to the old CETP. For the same the following action points are proposed:**			
	Ensure that no overflowing/leakages from sumps/tanks etc. takes place during conveying the effluent to CETP or from CETP to seashore.			Commissioning of two modules each of 12.5 MLD out of the 04 module (50 MLD) of the new CETP	**CETP**	30/06/2020	12.5 MLD of 50 MLD new CETP commissioned with charging of effluent w.e.f. 22/11/2020. However, there was breakdown and repair work in treated effluent disposal line of MIDC during 15/12/2020 to 20.12.2020 during which water supply was also stopped.

				Diversion of the aforesaid 9 MLD effluent from Sump-1 to the new CETP	**MIDC and CETP**	22/11/2020	Complied. Effluent of 9 MLD is diverted from old CETP to new CETP of Sump-1 w.e.f. 22/11/2020.
				Retrofitting of valves in Gravity Mains for channelization of about 02 MLD effluent (from M/s Bombay Rayon and M/s Siyaram) to the new CETP	**MIDC**	05/12/2020	Complied on 13/12/2020.
				Proportionate reduction of water supply in MIDC Tarapur from 38 MLD to restrict generation of about 16 MLD (about 09 MLD to new CETP and about 07 MLD to the old CETP) and thereafter proportionate increase in water supply as per increased treatment capacity of old/ new CETP.	**MIDC**	22/11/2020	Complying w.e.f. 26/11/2020. Supply was restricted from 38 MLD to 30 MLD and subsequently about to 25 MLD w.e.f. 26/11/2020 and 30/11/2020 respectively. Old CETP has remained shut down w.e.f. 26/11/2020 during which member units also voluntarily closed their wastewater generation processes. The CETP is expected to start with 07 MLD effluent inlet from 30/12/2020.

							Further, during volunteer close down by the units during 28/11/2020 to 29/11/2020 for repairing works, the water supply was stopped by MIDC. Details of water supplied and effluent generation and disposal of treated effluent are given at Appendix-A.
				Desludging of modules of CETP and Sumps to check overflow from sumps/tanks	**MIDC**	05/12/2020 and 25/12/2020	Desludging ofmodule-1 of CETP and Sump-2 and Sump-3 completed. MIDC has awarded AMC to check leakages in conveying pipeline to CETP and CETP to seashore the leakages are attended on priority within 24 hrs.

				To check leakages during conveying the effluent to CETP or from CETP to seashore	**MIDC**	Continuous process	MIDC has appointed AMC to check leakages in conveying pipeline to CETP and CETP to seashore the leakages are attended on priority within 24 hrs. Incidences of breakage of treated effluent discharge pipeline noticed at two occasions on 28/11/2020 and 15.12.2020 which were attended and repaired.
				Control of illegal tankers movement to check illegal water supply through tankers	**MIDC and District Administration**	Continuous	Daily monitoring by MIDC started from 25/11/2020 with a mechanism to report the illegal tanker details to the District Administration for action. District Magistrate, Palghar. issued order on 04.12.2020 under section 144 and 133 under Criminal Procedure Code 1973 banning water tanker movement in Tarapur MIDC w.e.f. 05/12/2020 to 02/2/2021 except Fire Tender vehicles and in extraordinary situations with written permission from MIDC.

4	c) Ensure that no bore wells operate in MIDC Tarapur to ensure the CETP hydraulic load does not exceed.	**Immediate**	**MIDC**		**MIDC**	Continuous	MIDC will work with District Administration. MIDC has reported that there is no bore-well operating since October 2020.

5	MPCB in association with CETP shall identify units not having adequate facilities to meet the aforesaid assessed CETP inlet effluent quality and such units be directed to segregate their high concentrated effluent and be stored separately at existing CETP or new CETP in case such storage is available at the new CETP or dispose of in Common TSDF Taloja for incineration. Such storage should not be allowed beyond 06 months. Storage and disposal of the same should be closely monitored by MPCB at regular intervals.	**Immediate**	**MPCB and CETP**		**MPCB and CETP**	Continuous	MPCB has issued direction in this regards to CETP on 10/11/2020 and 13/11/2020. However, CETP has not yet identified any such member unit having inadequate facility to meet the CETP inlet effluent quality. MPCB has deployed teams from 18/11/2020 for identification of such units. 226 industries have been monitored so far. Based on their field observation, data available with the Board and analysis result of samples of effluent collected by the team, MPCB is in the process of evaluation such observations/data for eastablishing/identification of units requiring segregation and storage/ disposal of high concentrated effluent and other non-

							compliant units. Necessary actions against such identified non-compliant units such as, identification of units requiring segregation and storage/ disposal of high concentrated effluent OR closure of the units OR Environmental compensation OR actions under section 15 of the EPA against the identified defaulting units, as the case may be, are expected to start within a week onwards viz. 04/1/2020. Meanwhile, units connected to old CETP for further treatment/disposal of their effluent have voluntarily stopped their waste water generating processes w.e.f. 26/11/2020.

6.	MPCB shall also monitor CETP inlet and outlet effluent preferably on the daily basis.	**Continuous till compliance is achieved**	**MPCB**		**MPCB**	26/10/0202 0 onwards	Complied. Besides on-going weekly monitoring by MPCB, daily monitoring inlet and outlet of CETP from 26/10/2020 up to 26/11/2020 (till the CETP was in operation) were carried out. Thereafter also, samples have also been collected &analysed up to 07/12/2020. The analysis reports (given at Appendix- B) reveal that the old CETP is not complying inlet/outlet norms.

7	In case if the above measures are not implemented effectively and CETP (either existing or new) continues to perform non-compliance to the inlet/outlet norms for a month, and in case no alternate arrangement is in place for disposal of effluent, MPCB may close operation of CETP and its member units who discharge their effluent to the CETP till the compliance is achieved.	**17/10/2020**	**MPCB**		**MPCB**	Continuous	MPCB is closely monitoring operation of CETP and the measures have been taken in order to control discharge of effluent not meeting the norms by CETP such as volunteer shut down of CETP w.e.f. 26/11/2020, Commissioning of new CETP & diversion of 9 MLD effluent to the new CETP w.e.f. 22/11/2020 which is compliant, reduction in water supply from 38 MLD to about 25 MLD to industrial units by MIDC in MIDC Tarapur
							,desludging of various sumps and units of CETP, installation of flow meters to inlets/outlet of CETP, vigilance by MPCB & CETP association, vigilance on illegal tanker movement and supervision of pipelines by MIDC, etc. In view of above progresses and target dates given by the CETP

							Operator for upgradation including ongoing identification of the defaulting units and proposed actions thereof by MPCB, decision on closure of CETP were deferred. However, in case the old CETP doesn't comply with the norms on resumption of its operation upon completing various upgradation works, MPCB shall close the CETP.

8	CETP shall take all necessary measures to control the influent quality & quantity besides improvement in overall scientific operation & maintenance of CETP with trained manpower and adequate analytical facility to keep watch on operational parameters at every stage of operation on a regular basis. With trained manpower and adequate analytical facility to keep watch on operational parameters at every stage of operation on a regular basis.	**Immediate**	**CETP**	**A)** For improvement in overall scientific operation and maintenance of the CETP I. Replacement of old SS-316 sluice gates within equalization tank inlet with new sluice gates. II. Replacement of floating aerators to submerged mixers in Collection equalization tank. III. Replacement of scrapping system in primary floculators and secondary clarifiers with new SS-316 scrapping system. IV. Conversion of 1st aeration tank into anoxic treatment tank and channelization of effluent into said first aeration tank followed by into second, third and fourth aeration tanks in series having extended aeration for removal of BOD so as to improve BOD removal efficiency.		30.12.2020	 Completed Completed Completed In process In process

				V. Installation of new tank where flash mixer will be installed so as to get more retention time for flocculation prior to flocculator tank.			In process
				VI. Installation of one new tank for holding primary and secondary sludge separately in two tanks as well as installation of two additional centrifuges along with two new filter presses.			In process
				VII. Increase in chemical preparation tank size.			In process
				VIII. Installation of auto dosing system with flow meter for in the proposed chemical dosing tank prior to flocculation tank.			In process
				IX. Installation of flow meter for activated sludge recirculation in the first anoxic treatment aeration tank.			In process
				X. Commissioning of OCEMS at inlet and outlet of CETP with prescribed parameters and connectivity with MPCB and CPCB servers.			In process Installation completed and commissioning will be completed by 10/1/2021

				B) For adequate analytical facility to keep watch on every stage of operation of CETP on regular basis. i. Installation of laboratory facilities at CETP for sampling and analysis of operational parameters viz. BOD, DO, pH, TKN, TDS, SS, COD, O&G, Alkalinity, conductivity, heavy metals etc. **C)** For trained manpower for operation of the CETP i. Hiring of six additional trained manpower in addition to the currently six laboratory persons and six technical supervisors for plant operation.			Complied. TEPS CETP started new laboratory at new CETP, whereas Laboratory at old CETP is used for general environmental parameter. The CETP has temporarily procured trained manpower from member industries and deployed at site as a short term measures whereas for long term additional manpower will be appointed by TEPS. Whereas TEPS staredproviding trained and skilled manpower.

9.	There should be proper surveillance of all units and the penalty mechanism for the defaulter units to be derived by M/s TEPS – CETP for member industries in addition to inspections of MPCB to ensure that all the member industries discharge the trade effluent meeting the norms as per their consent. In case of non-compliance observed during M/s TEPS-CETP monitoring surveillance, the list of defaulting industries should be provided to MPCB from time to time for necessary action against such units. MPCB should take stringent action against industries as found in surveillance of MPCB & TEPS including the recovery of environmental Compensation and prosecution of industries as per environmental laws.	**Immediate**	**MPCB and CETP**	i. Deployment of two teams each team having officials from MPCB and representative of CETP / industry association. ii. Finalization of penalty mechanism which includes termination/ Suspension of CETP membership of defaulting industry and enforcement thereof. iii. Providing list of defaulting units to the MPCB for taking stringent action including environmental compensation and prosecution of the industries.	**CETP & MPCB** **CETP** **MPCB**	Continuous from 18.11.2020 10.12.2020 Continuous activity	Day & Night Survey has been carried out by TEPS CETP appointed Committee and detected 11 units with abandoned old as well as new active connections to MIDC Chambers. CETP has not yet provided penalty mechanism to MPCB. CETP has not yet provided list of defaulting units to MPCB.

10	There is urgent need of common facilities such as Common MEE and Common Spray Dryer for High COD and High TDS effluent and such types of effluent should be separately collected and transferred to common MEE and Spray Dryer facilities with identification of such industries. Similarly, there should be some advanced method (such as advanced oxidation, Ozonation, etc.) to reduce the significant COD. CETP may ensure commissioning of the same at the earliest. Till the same is commissioned, high COD and high TDS effluent be stored at suitable place in case available at the new CETP under commissioning stage, for not more than 06 months, otherwise such effluent be disposed in Common TSDF Taloja by incineration. Storage and disposal of the same should be closely monitored by MPCB at regular interval and operation of such violators be closed besides other necessary actions by MPCB.	**Immediate**	**CETP, MIDC and MPCB**	i. Finalization of the DPR for common facility to treat high COD and high TDS streams. ii. Commissioning of the facility to treat high COD and high TDS streams as per DPR. iii. Identification of high COD and high TDS streams generating units. iv. Disposal of segregated high COD and high TDS streams to CHWTSDF/ resource recovery of the same (at authorized facility) by the identified units.	CETP	31.01.2021 30.06.2021 Immediate Immediate	Letter of intent issued by TEPS to M/s. Tesla for installation of high COD treatment facility having capacity 2500 CMD. Also, additional facility will be commissioned for high TDS stream. Till they are commissioned, the concentrated streams will be disposed to TSDF by member industries.

11	SCADA system for monitoring quality and quantity of individual member industry be commissioned by the CETP operator in association with industries and MIDC within 04 months. MPCB may ensure timely commissioning of the same.	**17/1/2021**	**CETP and MIDC**	1. Installation & commissioning of prescribed SCADA system in more than 25 CMD effluent generation units and less than 25 CMD effluent generating units. 2. Installation of SCADA in various sumps and gravity line. 3. Commissioning of the centralized SCADA system.	CETP and MIDC	17.01.2021 for 31.01.2021 for <25 MLD units 31.01.2021 31.01.2021	The SCADA platform for 55 industries installed and is under trial. Rest industries SCADA connectivity is planned on or before 31.01.2020., For that help desk is created and weekly one full day the engineers stationed at new CETP, for attending queries with respect to SCADA and industries to connect their hardware to TEPS CETP SCADA.
12	CETP shall regularly send the CETP sludge to CHWTSDF for proper disposal.	Immediate & Continuous	CETP	CETP sludge to be sent to CHWTSDF facility regularly ensuring storage not more than 90 days.	CETP	Continuous	About 6260 MT of sludge (5700 + 563) generated during desludging of sumps and CETP have been sent to TSDF for disposal. About 680+200= 880 MT of sludge lying at the CETP be also sent to TSDF as early as possible and within 90 days of its generation. Further, sludge generated during the on-going desludging activity shall also be sent within the required period.

13	The 55 units of 1216 industrial units in MIDC Tarapur, which are not member of the CETP, may be examined by MPCB w.r.t. wastewater generation from their processes. In case it is found that their processes generate wastewater, necessary action be taken by MPCB.	**Immediate**	**MPCB**	Assessment of current number of units in MIDC Tarapur vis-à-vis their CETP membership and identification of waste water generating units not having CETP membership for disposing their waste water and taking necessary action against such identified units.	**CETP/MPCB**	15/12/2020	MPCB communicated list of members with CETP and CETP has confirmed that 1216 units have membership to CETP.
14	MPCB to review authorization of CETP in terms of sludge quantity.	**Immediate**	**MPCB**	Assessment of CETP sludge generation and stipulating quantity of CETP sludge in combined consent cum authorization.	**MPCB/CETP**	31.12.2020	MPCB has already worked and Authorization for CETP sludge is under revision from 7 MT/D to 10 MT/D.
15	CETP is also required to work upon housekeeping of entire premises with cleanliness, plantation, internal roads etc.	**Immediate & Continuous**	**CETP**	1. Removal of unwanted scraps/material from the Old CETP site. 2. Repairing of internal roads and converting pathways into pucca. 3. Plantation of trees in open spaces consultation with agriculture expert**.**	CETP	-	Will be initiated upon completion of upgradation work.

Restoration/remediation of contaminated ground water and drains and, if applicable, the two creeks (NavapurDandi Creek and KharekuranMurbe Creek) and seashore also

16	Selection of a consultant to prepare Detailed Project Report (DPR) and provide consultancy services for remediation of contaminated sites in and around Tarapur MIDC for the Phase-I (detailed investigation, remediation plan, etc.) and Phase-II (execution as per the remediation plan) work.	**Immediate**	**MPCB**	1. Consultation with expert institute on selection of consultant and procedures of selection 2. Selection of consultant for DPR preparation and providing consultancy services.	31.01.2021 30/04/2021	**MPCB**	MPCB has received sample TOR from the CPCB and is in process to finalize IIT Mumbai as a consultant to carry out the study. MPCB has already discussed this issue in length with IIT and NGRI, Hydrabad. Work is in progress.
17	Execution of Phase-I and Phase-II work as per the DPR	**As per DPR**	**MPCB**	Award of work to the expert institute and execution of work as per the DPR.	As per the DPR	**MPCB**	Will be executed as per the DPR.
Expenses to be met for implementing the above remediation plan as at Sl. No. 16 and 17 above							
18	Recovery of damage and restoration cost from the respective 103 polluting units as recommended in the committee's report	**Immediate**	**MPCB**	Issuance of directions to the 102 units and the TEPS CETP for deposition of damage and restoration cost.	MPCB	23/10/2020	Completed. Board has issued the directions on 23/10/2020 to all 103 units.
				Deposition of damage and restoration cost from the 103 polluting units	**Respective units**	24/10/2020	One unit has deposited damage and restoration cost of Rs. 14.23 lakh. Initiation of necessary action against the 102 units is in progress in the light of the Hon'ble Supreme Court order dated 14/12/2020.

19	In case the cost of remediation increases or decreases to that of Rs. 75 Cr., the amount may be collected or refunded to each of the said polluting units, as the case may be, in the same proportion as has been recommended in the committee's report	**As & when required**	**MPCB**	Will be refunded or collected depending upon DPR preparation and completion of remediation work	**MPCB**	As & when required	Will be refunded or collected as and when required.
20	In case recovery of the remediation cost from the polluting units is delayed or not met partially or fully due to one or other reasons at any stage, the Govt. of Maharashtra may initially incur such assessment and remediation cost and initiate the remediation activities such as allocation of fund, selection of consultant, etc., as outlined above, in a month in consultation with MPCB.	**Immediate**	**MPCB**	Allocation of funds of Rs. 75 Cr. for meeting the expenditure towards remediation activities of contaminated sites by MPCB.	**MPCB**	As & when required	Completed. In case recovery of the remediation cost from the polluting units is delayed or not met partially or fully, MPCB has decided to meet such cost.

Annexure-III

Action Plan on Prohibition of use of contaminated ground water in affected areas in and around Tarapur MIDC till remediation plan is implemented

Sr. No	Action points as recommended in the Committee's report for remedial measures	Time Target	Responsible agency identified by the Committee	Action Points to meet the Action Plans as at Column	Executing agency	Proposed time target	Compliance status as on 28.12.2020
1.	Till the remediation plan is implemented, use of contaminated ground water in affected area of in and around Tarapur MIDC may be prohibited for drinking purpose	Immediate	CGWA,MIDC and District Administration	Identification of affected area of ground water contamination	Ground Water Surveys and Development Authorities (GSDA) Palghar;BDO Palghar, and; Sub-divisional Water Testing Laboratory	Immediate	13 GPs and 16 villages were identified in and around Tarapur MIDC with respect to ground water contamination. 86 water samples from Government marked borewells/dug wells and 535 water samples from private borewells were sampled and analysed for chemical and bacteriological testing. Out of that 5 Government and 61 private samples are found unfit for consumption for Iron and Turbidity factor. In addition 10 randomly selected samples were taken from these villages and tested for heavy metals and found fit for consumption. Noheavy metals detected in these 10 samples. However, there is need to identify villages other than aforesaid 16 villages where there may have potential impact on ground water.

				Remedial measures to prevent use of such unfit water sources for drinking purpose	District Water and Sanitation Mission (DWSM) Palghar; BDO Palghar, and concerned Gramsevak	Immediate	(i) DWSM cell Palghar already issued letter dated 19/10/2020, PZP/WSD/434/2020 to BDO Palghar and concern Gramsevak to stop use of drinking from these 5 contaminated sources and another letter issued dated 03/12/2020, Ref. No PZP/WSD/522/2020 for non using the water from 61 water samples for drinking purpose. (ii) All these 13 GPs and 16 Villages are having regional water supply scheme by MIDC for drinking purpose. (iii) In the survey conducted for collection of water samples from all these villages in the month of November ,December 2020, it is observed that all these sources are not used for drinking purpose, they are being used for domestic purposes like clothing, washing utensils etc.
				Advertisement in local newspaper about not to use ground water from affected ground water sources for drinking purpose.	CEO, ZilaParishadPalghar	04/1/2021	This was suggested by the committee in 07thmeeting held on 29/12/2020. The advertisement in this regard will be given immediately in local newspaper.

Annexure-IV

Action Plan on Remedying the health of the inhabitants including providing healthcare to the affected individuals of in and around Tarapur MIDC

Sr. No	Activity to be carried out as per order dated 17/9/2020 of the Hon'ble NGT	Time Target	Responsible agency identified by the Committee	Action Points to meet the Action Plans as at Column	Executing agency	Proposed time target	Compliance status as on 28.12.2020
1.	Remedying the health of the inhabitants, including providing healthcare to the affected individuals	Immediate	Zila Parishad Palghar	Identification of areas/inhabitants which may potentially have health impact due to illegal discharges from Tarapur MIDC	District Health Officer (DHO)	Immediate	Completed. Identified 16 villages (having population of 24,815 households with population of 91,016 covered under the 05 PHCs; 12 sub-centers) which may potentially have health impact due to illegal discharges from Tarapur MIDC. These 16 villages have been selected on the basis of representation received from applicant of the OA No. 64/2016 (WZ) i.e.Akhil Bhartiya Mangela Samaj to DM Palghar as affected villages. However, there is need to identify villages other than aforesaid 16 villages where there may have potential impact due to industrial activities in Tarapur MIDC.
				Orientation and Training programme to health officials about Active and	DHO/ Taluka Health Officer (THO)	28/11/2020	Completed. Imparted Training to 129 health care officials (12 Medical Officers, 06 Health Assistant, 08 Ladies Health Vistors/Genral Nursing & Midwifery; 04 Pharmacy Officers;

				Passive, Survey, Screening and Specialist Camp			08 Community Health Officers, 02 Lab Technician; 13 Auxillary Nurse Midwife; 04 Multipurpose Worker; 08 Block Facilitator; 64 Accredited Social Health Activist) in last week of November and first week of December 2020 in different Primary health centers and also block level.
				Advertisement in local newspaper about free health care and free screening camps to affected habitants	DHO	04/1/2020	This was suggested by the committee in 07th meeting held on 29/12/2020. The advertisement in this regard will be given immediately in local newspaper.
				House-to-House health survey	DHO/THO	18/12/2020	Completed. Conducted house-to-house survey during Dec. 01-18, 2020 in which 55,844 population was screened and following suspected persons were surveyed: (a) Skin infections = 361 (b) Respiratory Ailments = 100 (c) Tuberculosis =14 (d) Suspected Cancer Symptoms =21 The rest population goes out to work and was not available during survey. Their households are being instructed that said person can consult for their ailments in free screening camps if they require, also contact No. of ASHA'S is given to every household in jurisdiction of area distributed to ASHA'S.

				Conducting Health Screening Camps for the surveyed people	DHO/THO	Dec. 2020	Due to other national programmes the screening camps are arranged in third week of January as a revised plan. Screening camps will be conducted at respective primary health centres and medical officers and health staffs will primarily screen the surveyed people & others and if found suspected then will submit them for investigations and for specialist camps.
				Conducting Specialist Camps for follow up of identified patiens	DHO	Quarterly (From fourth week of January or first week of February 2021)	Specialist Camps for follow up of identified patients will be conducted quarterly at PHC (after completing screening through the aforesaid Screening Health Camps). Specialists camps will be conducted after screening camps in fouth week of january or first week of february as per date availability of specialists
				Distribution of medicines and patient referral to tertiary care healthcare centres	DHO	As and when required w.e.f. February 2021	This will be done after specialist camps as and when required w.e.f. February 2021

Annexure- V

Environmental Compensation calculation applicable on the 25 MLD CETP operator for continued violations till the reported period i.e. 28/12/2020

Environmental Compensation (EC), as per the Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund and as referred in order dated 28.08.2019 of the Hon'ble National Green Tribunal in the matter of Paryavaran Suraksha Samiti & Anr. Applicant(s) Versus Union of India & Ors., is as below:

EC = PI x N x R x S x LF

Where,

EC is Environmental Compensation in ₹

PI = Pollution Index of industrial sector

N = Number of days of violation took place

R = A factor in Rupees (₹) for EC

S = Factor for scale of operation

LF = Location factor

As per the aforesaid CPCB report, the above factors applicable in the matter under reference to M/s TEPS-CETP is:

PI= 80;

N= one month after order dated 17/9/2020 of the Hon'ble NGT (by which operation of the CETP were to be closed in the event of violations/non-compliances) till the analysis reported up to 07/12/2020 wherein inlet/outlet effluent from the CETP didn't meet the prescribed norms (except on 23/11/2020)= 49 days

R = Rs. 250/- (although maximum range is given up to Rs. 500/- in the aforesaid CPCB report, it has been suggested to consider R as 250, as the Environmental Compensation in cases of violation.)

S = 1.5

LF = 1

Therefore, EC= Rs. 14,70,000/- (Rupees Fourteen lakhs seventy thousand only) w.e.f. 17/10/2020 till the reported period up to 07/12/2020.

(Note: The committee has not applied deterrent factor giving benefit of volunteer shut down by the CETP operator)

Appendix- A

Daily water supplied to MIDC Tarapur & effluent pumped into/from the CETP

Date	Water supplied to MIDC Tarapur (in MLD)	Effluent pumped from Sump to CETP (MLD)				Treated effluent pumped to Sea (MLD)			Remarks
		Sump 1*	Sump 3	Sump-4	Gravity	Sump 2	Sump 5$	Total	
28-11-2020	4.50	0	1.2	0		0	0	0	Effluent pumping & water supply stopped due to breakdown of main disposal line.
29-11-2020	5.60	0	0.8	0		0	0	0	
30-11-2020	24.50	0	0.3	1.2		2	0	2	
01-12-2020	25.00	3.62	0	1.4		1.95	2.12	4.07	
02-12-2020	24.50	1.5	0	1.2		1.9	6.03	7.93	
03-12-2020	24.00	3.50	1.05	0.80		1.80	7.18	8.98	
04-12-2020	24.50	4.00	1.20	0.80		1.95	4.25	6.20	
05-12-2020	24.50	2.50	0.00	1.00		1.85	4.90	6.75	
06-12-2020	24.00	2.50	0.90	0.80		1.80	0.00	1.80	
07-12-2020	23.50	4.50	1.20	0.60		1.90	8.83	10.73	
08-12-2020	24.00	5.75	0.75	0.80		1.95	4.87	6.82	
09-12-2020	24.50	5.00	0.60	0.60		1.70	7.40	9.10	
10-12-2020	24.00	4.00	0.52	0.50		1.85	8.72	10.57	
11-12-2020	19.00	5.50	0.90	0.60		1.95	7.79	9.74	
12-12-2020	24.50	7.00	0.60	0.60		1.80	7.23	9.03	
13-12-2020	24.00	8.05	0.90	0.50		1.75	7.18	8.93	
14-12-2020	24.50	8.05	0.95	0.40		2.00	8.94	10.9	
15-12-2020	23.50	5.60	0.70	0.40		1.63	0.00	1.63	
16-12-2020	4.50	0.00	0.00	0.00		0.00	0.00	0.00	Effluent pumping & water supply stopped due to breakdown of main disposal line
17-12-2020	5.00	0.00	0.00	0.00		0.00	0.00	0.00	
18-12-2020	6.50	0.00	0.00	0.06		1.82	0.00	1.82	

19-12-2020	23.50	0.00	0.00	0.00		1.53	0.00	1.53	
20-12-2020	24.00	3.15	0.95	0.55		1.92	10.44	12.36	
21-12-2020	23.50	7.00	0.85	0.60		1.68	7.56	9.24	
22-12-2020	24.00	7.70	0.40	0.80		1.85	7.72	9.57	
23-12-2020	24.50	7.00	0.40	0.20		1.61	6.59	8.20	
24-12-2020	24.50	8.05	0.55	0.35		1.45	7.11	8.56	
25-12-2020	24.00	7.00	0.60	0.45		1.72	7.57	9.29	
26-12-2020	23.50	6.30	1.05	0.80		1.85	8.99	10.84	
27-12-2020	24.00	8.40	1.25	0.40		1.96	10.13	12.09	
28-12-2020	24.50	8.40	0.80	0.40		1.95	4.62	6.57	

*****_Effluent coming from units to Sump 1 which is pumped to the new CETP_

$_Treated effluent from the new CETP is pumped for disposal into sea_

Appendix- B

Analysis results of inlet and outlet effluent of the 25 MLD CETP and the new CETP (as sampled & analysed by MPCB)

25 MLD CETP INLET (Old)

Sr. No	Date of sample collection	pH	COD	Suspended Solids	TDS
			mg/l	mg/l	mg/l
Consent Standards		**5.5-9.0**	**≤3500**		
1	05.10.2020	6.9	2100	230	14560
2	12.10.2020	5.6	3880	468	9281
3	14.10.2020	4.3	775	320	9234
4	21.10.2020	5.1	4800	244	17208
5	26.10.2020	5	4800	116	19851
6	26.10.2020	4	5680	65	17112
7	28.10.2020	6	5520	92	24975
8	30.10.2020	7.3	5440	423	15813
9	31.10.2020	4.7	6600	577	18538
10	01.11.2020	5.5	5640	396	20694
11	02.11.2020	7.4	3600	353	14378
12	03.11.2020	8.1	4920	496	16232
13	04.11.2020	6.7	3792	529	11374
14	05.11.2020	7.9	540	365	13587
15	06.11.2020	5.8	4920	502	9077
16	07.11.2020	6.4	3328	498	11224
17	08.11.2020	7.6	3504	380	9841
18	09.11.2020	8.2	4480	360	14528
19	10.11.2020	6.8	4920	322	21878
20	11.11.2020	6.1	6680	292	11620
21	12.11.2020	6.2	4480	348	11176
22	13.11.2020	6.3	2400	248	5794
23	14.11.2020	6.4	2896	264	5774
24	15.11.2020	6.4	2752	198	5800
25	16.11.2020	6.4	2752	292	5818
26	18.11.2020	6	2624	322	8068
27	19.11.2020	7.4	4640	268	13248
28	20.11.2020	6	6720	88	8374
29	21.11.2020	8.8	47600	589	24000
30	22.11.2020	7.2	3560	374	8970
31	23.11.2020	6.6	3920	85	9990

32	23.11.2020	6.6	2000	83	4778
33	24.11.2020	7	5440	95	9760
34	25.11.2020	6.4	4040	82	12540
35	26.11.2020	8.7	6040	268	11440
36	27.11.2020	7.3	5120	86	5318
37	28.11.2020	7.4	8320	174	8856
38	29.11.2020	6.1	6400	140	8826
39	30.11.2020	6.6	3160	180	7172
40	01.12.2020	8.5	3400	104	7486
41	05.12.2020	7.4	9200	498	10344
42	06.12.2020	6.4	8400	220	22228
43	07.12.2020	6.4	8480	436	22176

25 MLD CETP OUTLET (Old)

Sr. No	Date of sample collection	pH	COD mg/l	Suspended Solids mg/l	TDS mg/l
Consent Standards		**5.5-9.0**	**≤250**	**≤100**	
1	05.10.2020	6.4	2992	190	13160
2	12.10.2020	6.6	3720	280	13518
3	14.10.2020	6.6	3640	386	14795
4	21.10.2020	6.1	3008	97	10276
5	26.10.2020	6.2	4000	5.4	10316
6	26.10.2020	6.1	3760	5.6	16502
7	28.10.2020	5.7	4000	122	26366
8	30.10.2020	6.3	3840	754	16708
9	31.10.2020	6	3744	840	14720
10	01.11.2020	6	4240	670	14083
11	02.11.2020	5.8	3568	991	15655
12	03.11.2020	6.2	3328	705	13212
13	04.11.2020	6.4	3232	592	12120
14	05.11.2020	6.6	3136	391	11738
15	06.11.2020	6.6	3088	465	11904
16	07.11.2020	6.3	3152	338	12369
17	08.11.2020	6.5	3760	508	12232
18	09.11.2020	6.6	3616	612	12108
19	10.11.2020	6.8	3264	608	11196
20	11.11.2020	6.5	2864	460	11142
21	12.11.2020	6.6	3088	540	12152
22	13.11.2020	7	3040	574	11358

23	14.11.2020	7.1	2928	544	11310
24	15.11.2020	7	2784	358	11138
25	16.11.2020	6.7	2944	618	10988
26	18.11.2020	6.9	2960	412	11218
27	19.11.2020	7.1	2800	292	11070
28	20.11.2020	6.8	3200	57	10180
29	21.11.2020	6.7	3320	292	10236
30	22.11.2020	6.8	5680	151	11970
31	23.11.2020	6.8	3840	94	10928
32	23.11.2020	7.6	68	11	2720
33	24.11.2020	6.9	3320	170	10320
34	25.11.2020	6.8	4120	247	10330
35	26.11.2020	7	2976	209	9808
36	27.11.2020	7.6	3400	333	11070
37	28.11.2020	7.3	3280	293	9518
38	29.11.2020	7.4	4720	389	10446
39	30.11.2020	7.3	4240	470	10620
40	01.12.2020	7.3	5400	544	10872
41	05.12.2020	6.9	1488	188	7508
43	06.12.2020	7	3480	154	11352
44	07.12.2020	7.1	3472	714	11092

CETP INLET (New)					
Sr. No	Date of sample collection	pH	COD	Suspended Solids	TDS
			mg/l	mg/l	mg/l
Consent Standards		5.5-9.0	≤3500		
1	22.11.2020	6.6	976	105	5570
2	29.11.2020	7.5	3000	454	3598
3	30.11.2020	7.3	928	77	4040
4	01.12.2020	7.3	1360	55	4180
5	05.12.2020	6.6	196	80	4372
6	06.12.2020	6.4	2464	612	4604
7	07.12.2020	6.7	3056	848	4564
8	08.12.2020	5.8	2200	118	7812
9	10.12.2020	8.7	1544	112	4686
10	11.12.2020	7.5	1856	168	6332
11	12.12.2020	6	1584	170	6228
12	13.12.2020	5.4	2680	278	8300

CETP Outlet (New)					
Sr. No	Date of sample collection	pH	COD	Suspended Solids	TDS
			mg/l	mg/l	mg/l
Consent Standards		5.5-9.0	≤250	≤100	
1	22.11.2020	7.6	48	19	3350
2	29.11.2020	6.7	232	16	4160
3	30.11.2020	6.7	104	28	4226
4	01.12.2020	6.8	220	60	4280
5	05.12.2020	6.3	2176	270	4932
6	06.12.2020	6.6	228	84	4268
7	07.12.2020	6.7	244	90	4140
8	08.12.2020	7	320	40	5372
9	10.12.2020	7.2	284	20	4572
10	11.12.2020	6.9	232	32	5136
11	12.12.2020	7.1	272	35	5224
12	13.12.2020	7	152	71	3076