

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/413

Date: 5/2/2020

Ld. Registrar General,
Hon'ble National Green Tribunal,
Faridkot House, Copernicus Marg,
DELHI

**Subject: 3rd Interim Report of the Monitoring Committee appointed in OA No. 6/2012-Manoj
Mishra vs UOI and ors**

Dear Sir,

The Hon'ble NGT vide its order dated 26.7.18 in OA no. 06.2012 –Manoj Mishra vs UOI and Ors had appointed a Monitoring Committee to monitor implementation of the Judgment dated 13.1.15 and orders thereafter. The Monitoring Committee in Compliance of the order submitted its First Interim Report on 17.1.19, Second Interim Report on 27.5.19 followed by Supplementary Reports on 28.6.19 and 2.7.19. Two special Reports on Phyto-remediation/Bioremediation in drains and River Front Authority for the Yamuna Floodplains were also sent on 20.1.20.

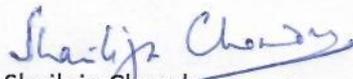
The Tribunal had taken note of the 2nd Interim Report and the Supplementary Reports in its order dated 11.9.19.

The Tribunal directed the NCT Delhi, States of Haryana and UP and DDA to file affidavits of compliance of the directions as on 31.12.19 before the Committee as well as the Tribunal on or before 15.01.20. However, YMC has received Affidavits containing status reports only from the State of Haryana, UP PCB (in respect of status of action to control industrial pollution) and the DPCC. Till date YMC has received no affidavits from NCT Delhi, DDA and the State of UP in respect of matters other than industrial pollution.

The Monitoring Committee was directed to submit its report by 31.1.2020. A short extension was sought by the YMC. Accordingly the 3rd Interim report (in two parts- Main Report and Annexures) prepared by YMC are enclosed herewith based on the Action Taken Reports received from various stakeholders and the various review meetings taken by the Committee.

It is requested that the 3rd Interim Report be placed before the Hon'ble Tribunal for its perusal.

Yours faithfully,



Shailaja Chandra,
Member,
Monitoring Committee for Yamuna



B.S. Saiwan,
Member,
Monitoring Committee for Yamuna

Encl: **As above**

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Third Interim Report of the Monitoring Committee

Appointed by the
Hon'ble National Green Tribunal
Vide order Dated 26th July 2018

Shailaja Chandra
B.S. Sajwan



Dated 5th February, 2020.

**THIRD INTERIM REPORT OF THE
MONITORING COMMITTEE**

For the
REJUVENATION OF THE
RIVER YAMUNA
&
ABATEMENT OF POLLUTION

List of Abbreviations

BOD - Biochemical Oxygen Demand

CCTV - Closed-Circuit Television

CETPs - Common Effluent Treatment Plants

CPCB - Central Pollution Control Board

CSE - Centre for Science and Environment

CWC - Central Water Commission

DDA - Delhi Development Authority

DJB - Delhi Jal Board

DM - District Magistrates

DMC-Delhi Municipal Corporation(Includes North, South and East)

DO - Dissolved Oxygen

DPCC - Delhi Pollution Control Committee

DSIIDC - Delhi State Industrial and Infrastructure Development Corporation

DTTDC - Delhi Tourism and Transportation Development Corporation

DWS &SD - Delhi Water Supply and Sewage Disposal Undertaking

EPCA - Environment Pollution Control Authority

GPS - Global Positioning System

GSDL - Geospatial Delhi Limited

HPCB - Haryana State Pollution Control Board

I&FCD – Irrigation & Flood Control Department

IIT - Indian Institutes of Technology

INTACH - Indian National Trust for Art and Cultural Heritage

MC - Monitoring Committee

MGD - Million Gallons per Day

MLD - Million Litres Per Day

MoEF &CC - Ministry of Environment, Forest and Climate Change

MoWR, RD&GR - Ministry of Water Resources, River Development & Ganga Rejuvenation

MSW - Municipal Solid Waste

NMCG-National Mission for Clean Ganga

NEERI - National Environmental Engineering Research Institute

NGO - Non Governmental Organization

NGT – National Green Tribunal

NIC - National Informatics Centre

PWD – Public Works Department

RWA - Resident Welfare Association

SMP - Sewerage Master Plan

SOP - Standard Operating Procedures

STP - Sewage Treatment Plants

UYRB - Upper Yamuna River Board

ZLD- Zero liquid discharge

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Overview

The Hon'ble National Green Tribunal (NGT) appointed a two member Yamuna Monitoring Committee (YMC) to monitor the execution of the Tribunal's orders -starting with the latest order dated 26.7.18 which encapsulated earlier orders and enunciated the mandate of the YMC. The focus of the monitoring was directed to be on the abatement of pollution in the River Yamuna, the drains flowing into it from within Delhi, Haryana and Uttar Pradesh and equally on the rejuvenation of the river. The YMC started functioning from 4.8.18 and began by reviewing the status of implementation of commitments made to the NGT and the directions given by the Tribunal. After reviewing the status with 16 stakeholders what needed to be done was presented in an Action Plan dated 22.10.18. This was submitted to the NGT and approved for implementation.

Based on the Action Plan continuous review meetings were held with the Departments and Authorities concerned with the pollution and rejuvenation aspects of the river. The monitoring was done vis- a- vis measurable targets set out in the Action plan which had been accepted by the implementing agencies during discussion and were minuted. Records of all meetings held were put on the website of the YMC.

The present report is the third in the series of interim reports and chiefly responds to specific directions given by the NGT in the order dated 11.9.19.

In terms of an overview the developments over the last 15 months since the YMC started functioning have shown several positive achievements which have brought better coordination in dealing with multifarious problems that beleaguer the cleaning of the river. The rejuvenation aspects have begun to be accorded high priority, particularly as efforts to build public awareness depend also on the degree of interest and ownership evinced by citizens.

For proper rejuvenation of the river it requires a certain minimum level of uninterrupted flow for supporting aquatic biodiversity and socio-cultural needs of the riparian communities. NGT in its judgment dated 13.1.15 and subsequent orders had directed that an E- flow study for the river Yamuna has to be taken up and measures like creation of off river reservoirs along the

river's floodplains pursued. These directions had seen no forward movement from 2015. It was only when YMC took up the matter with the Ministry of Jal Shakti, NMCG and the NCT Delhi and underscored the necessity for a study to determine the E- flow that the study was ordered. YMC also pursued the Irrigation Department to undertake a pilot project for creating off the river reservoirs to augment ground water and help recharge the river during the lean season.

Special mention is being made of some important achievements. Initially the biggest challenge was instilling a sense of accountability in several agencies that had little awareness or concern for a large quantum of sewage being discharged in the storm water drains. In an environment of denial and apathy the notification of the Septage Management Regulations (November 2018) requiring registration of septage collectors and the need to discharge the sewage only at designated points can be termed an achievement. It was pursued by YMC with all authorities in the Government. The concept will take a long time to become regular practice but the fact that it has been notified for implementation which too has started, gives reason for satisfaction.

While work on the construction of new STPs and the rehabilitation of the older STPs is in progress, better monitoring and a focus on maintenance have instilled a sense of accountability. This has resulted in quantifiable improvement. Considering the extent of apathy that existed earlier, a change in attitude is now palpable. The challenge now lies in building ownership between the Delhi Jal Board and the enforcement agencies viz., the Municipal Corporations and the District Magistrates where the coordination exercised by Delhi Jal Board continues to be weak and amorphous. If the defilement of the storm water drains which empty into larger drains leading to the Yamuna continues, no amount of monitoring will have an impact.

Although the status of sewage collection in the drains has been dealt with in detail in a separate chapter in this Report, some distressing facts need to be highlighted. First, even in colonies notified as sewered a large number of households had not taken regular sewer connections and at places these had been obtained surreptitiously through direct connection with the sewer. Others continued to discharge their sewage into the drains. YMC was informed

that in East Delhi, which is completely seweraged, the household sewer connectivity was as low as 30%. There were colonies like West Jyoti nagar where household sewer connectivity was still lower at 12%. The DJB officials expressed helplessness in compelling households to take regular connections. It was only after repeated exhortations made by YMC to DJB, that finally 2.30 lakh households began to be issued notices by the DJB. YMC can legitimately assume some credit for having first obligated DJB to issue notices to households without house connections and later for a Government decision to provide free sewer connections to all the households by 31.3.20 under the Mukhya Mantri Free Sewer Yojna. If implemented, the policy would make a major dent on the situation of sewage flowing into the drains around the unauthorized colonies.

Another positive achievement has been an acceptance by a number of park owning agencies that treated waste water has to be used in lieu of ground water extracted through bore wells. DJB which has millions of gallons of good, treated water was not according any priority to this despite NGT's repeated orders. But after the September 2019 directions of NGT, there is a perceptible difference. Even the Departments and agencies that own parks have begun to cooperate and the realization that the groundwater table has reached alarmingly low levels at some places in Delhi has dawned on the Horticulture Departments of DDA and MCD. It remains a challenge with others under the Central Government. Undoubtedly the collection of water from the nearest STPs and carrying it to parks is only a temporary solution but none-the-less it is aimed at optimally utilizing clean water treated at a very high cost. More importantly it is intended to reduce dependence on ground water extraction. The ultimate goal is still not within sight when all park owners run their own STPs or alternative technologies, like, phyto-remediation using drain water at site.

The slow but tangible progress made by the Delhi Development Authority to start implementing several wetland and rejuvenation projects which had been lying dormant for years together is also a matter of some satisfaction. The level of interest and ownership in demarcating and protecting the floodplains, preventing and removing encroachments, nabbing trucks dumping construction and demolition waste into the river have all received impetus mainly because a climate of zero tolerance was shown by NGT. The YMC has been monitoring

the progress down to the smallest detail. Due to several directions and strict orders issued by NGT, the officers have begun to respond and in no small measure the change is also attributable to the present Vice Chairman of DDA who has given a positive direction.

For decades Delhi was accustomed to the Yamuna getting inundated with Plaster of Paris idols decorated with synthetic paints driving pollution levels to unacceptable standards. In August 2018 the YMC had held its first meeting with all stakeholders comprising more than eight agencies. It was evident that the exercise was routine and confined to simply managing processions and building bamboo barricades inside the river to facilitate immersion. NGT had issued strict orders about stopping idol immersion and following the CPCB guidelines on the material to be used but the implementation appeared unachievable. Despite NGT's exhortations and the YMC having pursued the matter vigorously, official acceptance was virtually non-existent. It was then brought to the notice of the Divisional Commissioner and data collected by the YMC from other places in the country where immersion of idols into rivers had been stopped effectively was shared with him. It is a matter of great satisfaction that the Delhi Jal Board also cooperated, supplied clean water, the Municipal Corporations dug over 116 pits and converted them into artificial ponds for idol immersion and alongside an effective publicity campaign was carried out by the government and in particular by the Department of Environment and DPCC. All authorities ensured that no idol was allowed to be immersed in the river. This certainly resulted in overall lowering the levels of pollution compared to the previous year and received wide media coverage.

Concerned with the possible adverse impact on health by consumption of vegetables grown on the flood plain, the NGT had, on the basis of some adverse reports received, directed that no food crops or vegetables should be grown on the floodplains of the river. As the opinion on this was divided among experts and in orders to allay public apprehension about the toxicity in such vegetables the YMC directed NEERI and the FSSAI & CPCB to undertake two independent studies to assess the toxicity levels in the soil and in the vegetables and fruit grown on the riverside. The findings of both the studies were submitted to Hon'ble NGT as part of the Interim report of YMC. Copies of the reports are also available on the website of the

YMC. They represent the views of statutory agencies who are charged with containment of pollution in the food chain.

Another achievement which stands out is the enormous effort made to bring awareness about the river Yamuna and stopping pollution there in undertaken by the Education Department of Delhi. By now lakhs of students have participated in a slew of programmes aimed at building awareness about the causes of pollution in the river and ways to prevent it. Thousands of children have been taken on visits to biodiversity parks so that their eyes open to the bounties of natures and how the river cleans itself when unthinking human activity does not destroy it. If this tempo is kept up and in future schools from the Municipal Corporation and the private sector are included in the efforts ownership for the river will certainly increase. It is a matter of pride for the YMC that in the forthcoming elections all political parties have referred to cleaning the river Yamuna as a political commitment.

In conclusion while there is a lot that can be said in terms of achievements nothing of magnitude will happen unless citizens get a chance to experience the river and take pride in its beauty and serenity. At present that sense of ownership and pride does not exist – first because the river despite all the preventive measures remains dirty and second because there are no activities and places that can be visited easily and enjoyed. It is only when people start enjoying a visit to the river and it becomes a place worth visiting that real ownership will come.

The YMC expresses its sincere gratitude to the NGT for extending this unique opportunity to contribute to the improvement of one of the most important lifelines of the city.

Chapter – 1

Environmental Flow

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

- a) *The impact on ground water regime due to pilot project may be monitored by CPCB, DPCC and CGWA. The study being carried out by the National Institute of Hydrology, Roorkee (NIH) on directions of NMCG may be completed as per schedule by March 2020. An interim report be furnished by December 2019.*
- b) *The current regime of Environmental flows may be augmented especially in lean seasons by way of coordination amongst member states stakeholders.*

Report of YMC

- a) The Principal Committee appointed by the Hon'ble Tribunal in the meeting held on 18.10.18 had accepted the recommendation of the NGT appointed Yamuna Monitoring Committee (YMC) to undertake an Environmental Flow study for River Yamuna. Accordingly, National Mission on Clean Ganga assigned the study to the National Institute of Hydrology Roorkee. Taking forward the recommendation dated 6.5.15 of the Principal Committee and order dated 11.6.15 of the Tribunal; the Action Plan of YMC had identified creation of off-river reservoirs on the floodplains of river Yamuna with the purpose of capturing flood waters for ground water recharge.

The Government of NCT of Delhi through its Department of Irrigation & Flood Control undertook a pilot project for creating a shallow reservoir/pond over 17.6 acres of the floodplain at Palla on a pilot basis after obtaining approval of relevant authorities. The average depth of the reservoir was 1.5 mtr. The entire exercise was done in consultation with M/s. INRM Consultants Pvt. Ltd. and M/s. TTI Consulting Engineers, who were also responsible for preparing the project report.

The key observations as per the report received from the Consultants were:

- The average rise of ground water was to the tune of 1-1.3mtr near shank 6 and 7
- The ground water flow direction was towards the city in the study area whereas physiographic flow direction in the pilot project westwards the River Yamuna.

- Percolation rate is about 81-96 mm per hour.
- During the monsoon period a huge amount of silt gets deposited in the pond and as a result the capacity of the reservoir has been anticipated to get reduced.

The observations/findings of the consultants were reviewed in a meeting held under the Chairmanship of Member, Central Water Commission where UYRB, I&FCD, CGWB and CPCB were also represented. Separately the CGWB has also made an assessment of the impact of the pilot project on ground water. The key observations of CGWB and the Committee headed by Member, CWC are that this pilot project needs to be executed for one more year to be able to assess its impact on the ground water. Further, the Committee observed that cost of the project is high as compared to the quantity of water harvested. Therefore, the State will have to take a decision on its continuation based on overall economic and environmental benefits. The reports of the CGWB and the minutes of the meeting held under the chairmanship of Member, CWC are attached as **Annexure – C-1/1 & C-1/2**.

Separately CPCB also held a meeting on 17.12.19 (**Annexure - C-1/3**) in which it was decided to install piezometers at suitable locations to measure the ground water level, the flow direction as also mount percolation studies. The meeting recommended that the study be continued for three years to assess the efficacy of the pilot project.

Since the outcomes will take time to be available, a direction may be given to the CGWB and the CPCB to treat the exercise as a tool to taking operational decisions. While the need to collect data is recognised, the need for these efforts to become an aid to early decision making has to be recognised. The YMC will follow this up but a specific observation from NGT is needed.

- b) The National Institute of Hydrology (NIH) has submitted an Interim Report on the Environmental Flow study for the stretch of the river from Palla to Okhla. The progress of the study was reviewed in a meeting held under the chairmanship of Secretary (Water Resources) on 9.12.19. A copy of the minutes of the meeting held on 9.12.19 is enclosed as **Annexure- C-1/4**.

On the suggestion of the YMC, IIT Kanpur and Wild Life Institute of India were also included as Members in the Oversight Committee constituted by NMCG.

The key findings, though provisional in nature, are that minimum environmental flow levels required at Palla will be of the order of 38 cumecs. This has been co- related to a depth of 90 to 120 cm. required for the indicator fish species Riimas bola and Banganadero and is unrelated to the quantity of water released at present. This flow level is, however, subject to alteration once the cross sectional study for the different river stretches, which is still continuing, is completed. The study will also cover the various measures that are required to be taken within the river basin for enhancing the flow in the river and the probable quantitative impact thereof. The summary of the recommendations/findings contained in the Interim Report are placed at **Annexure-C-1/5**.The detailed Interim Report will be uploaded on the website of the YMC once Hon'ble NGT has considered the third Interim Report of the YMC.

The Final report as confirmed by NIH will be submitted by 31.03.2020.

Chapter – 2

DDA and Demarcation of the Flood Plains and Conservation Activities

Summary of Directions of the Hon'ble NGT concerning DDA and the Flood Plain.

There are 11 different matters in the orders of the Hon'ble National Green Tribunal dated 11 September 2019 (a) to (k). The orders have been reproduced below:

- a) *DDA may undertake physical demarcation of the entire floodplain within three months and thereafter, after taking re-possession within next three months, fence such areas and convert them into bio-diversity parks as per the action plan proposed by them. DDA will be liable to pay a sum of Rs. 5Lakh per month till compliance of this direction from 01.04.2020 which may be recovered from the erring officers and deposited with the CPCB for restoration of the environment. The Monitoring Committee will look into the compliance.*
- b) *No activity of edible crop/ cultivation on the floodplain may be undertaken. The DDA may ensure compliance in the same manner as direction (a) above with regard to accountability of officers.*
- c) *The DDA to assign the task of demarcation, re-possession, fencing and development of bio-diversity park thereon to an appropriate and dedicated institutional setup.*
- d) *DDA shall complete the work of putting of CCTVs and keep the area secure from further encroachments as such.*
- e) *The agencies (Railways, NHA and GAIL) shall give requisite permission to DDA for launch of optical fiber cable within one month of the receipt of such request after which the DDA will be free to proceed subject to any objection there against being considered by this Tribunal.*
- f) *The UP Irrigation Department shall give permission to DDA for the execution of CCTVs related work to the DDA within one month of the receipt of such request after which the DDA will be free to proceed subject to any objection there against being considered by this Tribunal.*

- g) DDA to strictly regulate illegal dumping of malba or carrying the same to flood plain by collecting compensation wherever violations are found and submit action taken report to Monitoring Committee.*
- h) The prohibition with regard to the throwing of pooja material or any kind of other material in river Yamuna except only designated sites to be ensured by DDA, GNCT, UP and Haryana.*
- i) The Transports Departments of GNCT, UP and Haryana need to enforce the said polluter pays principle so that no malba is dumped on the floodplains.*
- j) In view of comments of the Monitoring Committee, the DDA is directed to undertake the work of restoration of flood plains so that such flood plains undertakes or performs the requisite ecological functions and DDA submits an action plan with timelines to Monitoring Committee in this regard, within one month from today.*
- k) The DDA is not shown to have to furnished performance guarantee in terms of order dated 29.01.2019. The same may now be furnished with additional sum of Rs. 5 lakhs for the delay within one month failing which coercive method have to be adopted for enforcement of the order.*

Report of YMC:

Broadly speaking it is noteworthy that there has been significant progress between July 2018 when NGT gave renewed directions to the DDA and the end of December 2019. At the time when NGT had issued its order dated 26th July 2018 and until the first meeting with the Vice Chairman DDA was held on 15.10.18 there had been no development on the directions. This is amply borne out by what is recorded in the Action Plan of YMC dated 22.10.18. This was despite DDA having given commitments to the Tribunal right from 2015 without actually taking any definitive action. The very first time DDA identified 10 projects for flood plain protection, selective development and for undertaking rejuvenation activities was several months later and were included by the YMC only after DDA gave details in the Authority's Action Plan received in January 2019. Thereafter the YMC has regularly reported progress on the milestones and timelines in January, May, June and August 2019. This led to the NGT giving time bound directions on different matters contained in the NGT order issued on 11th September 2019.

Generic Governance Issue.

The biggest hurdle was to overcome the absence of ownership for the river in the DDA. Although there has been progress on individual projects and enforcement activities, overall nodal responsibility does not rest with a single senior officer who would be accountable for multifaceted aspects of protecting and rejuvenating the river.

In several meetings the YMC had impressed upon the Vice-chairman and other officers from the DDA that the present system of different officers in charge of landscaping, sanction and supervision of civil works, horticulture and enforcement activities all functioning in their own vertical silos was leading to an absence of involvement.

Presently, the senior most officer under the Vice-Chairman dealing with forests, parks, including bio-diversity parks is the Principal Commissioner (Horticulture) who is an Indian Forest Service officer. All construction related projects, demolitions and follow up of enforcement action is with the Engineering side. Drawing up estimates, obtaining administrative approvals, tendering for civil works all take between 6- 12 months during which time there appears to be little interface between the Horticulture, Landscaping and Engineering Divisions. Officers have repeatedly given unverified/contradictory information to the YMC because they are unaware of developments beyond their direct area of work.

Had the Vice Chairman not taken up the coordination functions with seriousness, in pursuance of NGT's directions, whatever has been achieved today could not have happened. This point is being laboured because it will affect the future progress of more than a dozen activities involving the flood plain and on which there are several interdependencies. In the very nature of officers' career management, senior officers will change and follow up with new incumbents will become a problem leading to slippages until the new officers take full charge. It is not for the YMC to report on the Authority's internal functioning but the subject assumes importance as the river and its functions cannot be handled like a departmental file or a series of engineering projects. It needs continuous ownership, supervision and commitment which once again raises the need for a single coordination authority for the management of the river as a whole. Otherwise without a unified structure it would be very difficult to keep track of

numerous projects, programs, court matters and rejuvenation activities. The need for a unified authority is paramount if the efforts are to be sustained. NGT has given time to DDA in its order dated 23.1.20 to come up with a response by 7.2.20. YMC can respond further when the response becomes available.

YMC's Report from September '19 to December '19.

After the last order of NGT dated 11.9.19 the YMC held 6 meetings involving different aspects of the flood plain and related issues and carried out inspections in which DDA officers participated. The subjects have a cross cutting dimension and the major issues included:

- the protection of the flood plain;
- the creation of wetlands at identified locations;
- demolition plans and action taken to retrieve flood plain land and free it of encroachments,
- enforcement against vehicles dumping debris in and around the flood plain,
- progress on financial devolution by the State of Uttar Pradesh on DDA to undertake floodplain rejuvenation on the Eastern bank of the river,
- progress of 10 identified projects which DDA had undertaken to complete by specific dates.
- tree plantation drives,
- closure of bore wells and plans for larger use of treated waste water. Dealt with in Chapter – 10, Use of Treated Waste Water.

On all the subjects the progress is as given below and supported by data annexed to the report at **Annexures – C-2/1 and C-2/2 to be read along-with attachments A& B in DDA's report.**

1. Demarcation of one in 25 years floodplain and fixing of bollards, fencing, installation of CCTV cameras and deployment of security guards to protect the floodplains.

- a. DDA has reported that 90% of the work has been completed and the signages, bollards, provision for flags between the bollards, embankment fortification work has been completed or will be has completed latest by April 20. The work has been executed on

the basis of the recommendation of IIT Delhi and got prepared through the Chief Engineer of the Irrigation Department using GSDL as had been directed by NGT. So far 100 bollards have been erected (some of which were seen by the YMC).Annexure A attached to DDA's response at **C-2/1** refers.

- b. Private security guards have been deployed and the possibility of deploying ex-servicemen security guards for round- the- clock surveillance has been accepted and the process is under way. Annexure A attached to DDA's response at **C-2/1** refers.
- c. By way of enforcement 170 challans have been issued with penalties of Rs.50, 000 each but recovery as of now was only Rs 4 lakhs. The data has been shared with the concerned Transport Commissioners and plying of 23 vehicles has been blocked until the money is paid. This is a great improvement as in the earlier months DDA was taking the stand that they could not do anything to nail this defiance. Annexure attached to DDA's response at **C-2/1** refers. The YMC will now write to the Transport Commissioners to get action expedited as NGT has already given a clear direction.
- d. Installation of CCTV cameras is still in progress but it has been reported that it would be completed by the end of January 2020. Annexure A attached to DDA's response at **C-2/1** refers.
- e. ISRO has been engaged for mapping the vacant plots of DDA including all areas of unauthorised colonies and the satellite imagery is being stored in half yearly and annual renditions and is thus expected to help identify incremental encroachment in the intervening period. This will also cover the floodplains. YMC has only been given this report recently and in the forthcoming months. Annexure A attached to DDA's response at **C-2/1** refers. YMC proposes to view a presentation of this data along with ISRO experts and the DDA and a further report would be furnished accordingly.
- f. DDA has also engaged IIT Roorkee and Survey of India for mapping the boundaries of the unauthorised colonies and vacant plots which is more professional than depending on photography. It would be recalled that the YMC had given these suggestions as well as the engagement of ex-servicemen/drones / GIS maps and satellite imagery through ISRO. Although all these matters have taken more than 15 months to fructify, it is

encouraging that ultimately things are beginning to fall into place. Annexure A attached to DDA's response at **C-2/1** refers.

- g. The removal of C& D waste has also shown progress and it has been reported that 2600 cum of such waste which was dumped at Nizamuddin Bridge and opposite Sarai Kale Khan has been lifted to the IL& FS site at the Shastri Park recycling Plant. Annexure A attached to DDA's response at **C-2/1** refers.
- h. The removal of illegal encroachments by cultivators has begun and the data provided at **Annexure –C-2/3** shows that about 556 acres has been retrieved and this is despite the demolition having been rendered infructuous on some occasions because of police absence despite agreement. This calls into question whether the system of DDA making a request to the police and the police having to give priority to more important demands in the nick of time should not be factored into the overall plan. Out of 22 demolitions involving 556 acres over the period 10.5.18 to 29.11.19 the police did not turn up or turned up too late in 3 cases. Every demolition that does not take place only gives an opportunity to the illegal occupants to gain time by obtaining court stays or by bolstering evidence about rights to live unhindered. The YMC recommends that for demolition activities on the flood plains of the Yamuna, the police Department may be permitted to engage auxiliary forces the details of which can be worked out and reported by the Police Department to the DDA and to the YMC. Such an Auxiliary force can remain captive to DDA according to the number of demolitions and the areas to be got vacated and for which DDA would make payment accordingly. If this is approved in principle YMC will hold a meeting to see how best such an arrangement can be worked out within the framework of law and the cooperation of the police. A direction that this may be attempted in public interest for the flood plain may kindly be considered.
- i. Progress on 10 projects undertaken by DDA for the restoration and rejuvenation.: The progress on these 10 projects shows they are now moving ahead and the timelines are being adhered to.
 - i) Old Railway Bridge to ITO Barrage (Western Bank) – Asita West. (Expected Completion date January 2021).

- ii) Geeta Colony Bridge to ITO Barrage (Western Bank) - Eco tourism Bundh. (Expected Completion date January 2022).
 - iii) Old Railway Bridge to ITO barrage (Eastern Bank) Asita East. (Expected Completion date March 2020).
 - iv) NH24 to DND Flyway (Western Bank). (Expected Completion date May 2020).
 - v) DND to proposed Kalindi By-Pass (Western Bank)- Khijrabad. (Expected Completion date December 2019).
 - vi) NH-24 to DND Flyway (Eastern Bank) Part Area-I. (Expected Completion date January 2021).
 - vii) NH-24 to DND Flyway (Eastern Bank) Part Area II- Hindon Cut Wetland. (Expected Completion date July 2020).
 - viii) Wazirabad Barrage to ISBT Bridge (Western Bank) around Garhi Mandu Village & Usmanpur Village. (Expected Completion date September 2020).
 - ix) Wazirabad to Old Railway Bridge (Western Bank). (Expected Completion date June 2020).
 - x) ITO to NH-24 (Eastern Bank & Western Bank). (Expected Completion date January 2021).
- j. According to the present timelines, five of the projects would be completed within the year 2020 the latest one stretching till September 20. Three projects would be completed by January 2021. Only one project would remain which would go on till January 2022. These timelines are acceptable and adhere to the commitments made earlier.
- k. Cultivation on the floodplains.

On the Uttar Pradesh side the YMC had taken the initiative to get the Principal Secretary Irrigation in UP and the VC DDA to meet as the matter of UP paying for the deposit work for development of the flood plain to DDA was just getting tossed around between both agencies. The YMC had pursued it with the CS UP, the Principal Secretary Irrigation and requested that the matter be placed before the CM UP to get the unbudgeted amount of Rs 35 crores to be sanctioned as a special case. In the

interregnum the YMC had directed the DDA to issue the NIT to save time .In December 2019 YMC was informed by UP officers that the approval is awaited . This has been held up for several months. Work should now start now as it is expected to take 9 months to be completed after it starts.**NGT is requested to give a direction on this as only assurances are being given at each review.**

Conclusion

Monitoring and coordination among the DDA officials has improved. After initial delay the tempo of activities and sense of ownership, has now picked up. The real test would lie in whether DDA can sustain the momentum built up and ensure that the land is kept free of encroachment. Also see that the developments are executed in ways that benefit the River ecologically and the citizens too benefit from better access to more environmentally friendly spaces for birding, walks, cycling and cultural activities.

(In the Chapter on Drains certain recommendations to at least have a security system and watch and ward to be set up have been made which are applicable here too.)

The YMC proposes to start a process of inspections of the physical progress on the ground after an interval of 3 months.

Chapter 3

Quality of River Water

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

“Monthly reports on the water quality be furnished by DPCC to the Monitoring Committee which must also contain data on Faecal coliform and till the time DPCC establishes its own laboratory network, the samples may be got analyzed either from CPCB laboratory or other accredited laboratory with respect to aforesaid parameter. Such reports must be placed on the website of DPCC and CPCB. For failure to comply with this direction, DPCC will be liable to pay environment compensation of Rs. 2lakh per month to CPCB for restoration of environment with effect from 01.10.2019. The amount can be recovered from the erring officers apart from appropriate entries in their service records.”

Report of YMC

The water quality of river Yamuna is monitored both by CPCB and DPCC. Whereas, CPCB maintains 5 stations, namely, Palla, Nizamuddin, Okhla Bridge, Okhla(downstream of Shahdara drain) and Agra canal at Badarpur the DPCC stations are at Palla, Surghat, Khajuri Paltoon Pool, Kudesia, ITO, Nizamuddin, Agra canal(Upstream of Okhla), Agra Canal after meeting of Shahdara drain and Agra canal at Jaitpur. The YMC had asked the CPCB to do a trend analysis of water quality in River Yamuna for the last 5 years using the data collected both by CPCB and DPCC. The report received from CPCB brings out that dissolved oxygen levels in river Yamuna are complying with water quality criteria for outdoor bathing at 2 locations, namely, Palla and Surghat during all 5 years. However, at other locations the water quality is non-compliant with the dissolved oxygen standards. So far as BOD concentration is concerned, the water quality is complying with the standard at only 2 locations, namely, Palla and Surghat during all 5 years. However, at other locations the BOD concentration is varies from highest levels of 98mg/litre at Khajuri Paltoon and 97 mg/litre at Okhla after meeting Shahdara drain. The high concentration of BOD and COD levels at these locations is due to discharge of untreated waste water and joining of various drains at points between Nizamuddin and Okhla. The Bacteriological analysis

of water samples of river Yamuna has also shown an increased level of Total Coliform and Fecal Coliform during the period 2015-2019 at all the stations. At present DPCC undertakes the bacteriological tests in the CPCB laboratory, however, from next month onward the TC and FC testing will be done in DPCC's own laboratory for which necessary infrastructure has now been created.

The YMC has also received comparative drain data both of flow and BOD load discharged into the river Yamuna. The comparative figures of 2017, 2018 and 2019 are placed at **Annexure C-3/1**. It will be noticed that although the discharge into river Yamuna from various drains has reduced from 3450 MLD in 2017 to 3026MLD in 2019, the reduction in BOD load per day is only marginal though there was substantial decline of 20.53% TPD during 2018 in comparison to 2017.

The YMC had earlier monitored NGT's directions to the DPCC to set up an Online Monitoring System for water quality monitoring of the river at Palla, particularly with reference to the presence of Ammonical Nitrogen. The DPCC has since established the OLMS at Palla which will help in issuing early alerts to the DJB water treatment plant at Wazirabad in the event of deterioration in water quality received at Palla due to discharge of sewage/industrial effluent from Haryana.

Improvement in the Yamuna's water quality at Delhi will require stoppage of sewage and industrial waste water discharged from both Haryana(about 500 MLD from several townships) and UP(65 MLD at Ghaziabad). Besides the flow of sewage through Najafgarh and Shahdara drains which contribute about 2400 MLD of waste water out of 3026 MLD and all other drains in Delhi has to be trapped. The action proposed to be taken up by Delhi are discussed in the Chapters 1, 4, 5, 6,7 and 8. The Action proposed to be taken by Haryana and UP are discussed in Chapters 12 and 13 along with timelines.

YMC will monitor the progress.

Chapter - 4

Sewage Treatment Plants

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

a) DJB has to give definite milestones and timelines to bridge the gap in terms of poor capacity initialization within one month.

b) The DJB to prepare an Action Plan with timelines for better capacity utilization of STPs by tapping the drain as a short term measure to reduce pollution in River Yamuna within one month.

c) DJB to prepare an action plan with specific timelines and implement the same in terms of bridging the capacity gap and upgradation of existing STPs that are functioning on old parameters.

d) DJB to take concrete steps in terms of actions not taken so far and fix the accountability of erring officials.

e) DJB to complete the task of setting up of STPs by 31.12.2020.

f) The DJB needs to spell out action to be taken with specific timelines within one month.

g) Bioremediation and/or phytoremediation or any other remediation measures may start as an interim measure positively from 01.01.2020, failing which the Govt. of NCT of Delhi may be liable to pay compensation of Rs. 5 Lakhs per month per drain to be deposited with the CPCB. This however, is not to be taken as an excuse to delay the installation of STPs, sewerage network and its connectivity. For delay of the work, the Chief Secretary, Govt. of NCT Delhi must identify the officers responsible and assign specific accountability. Wherever there are violations, adverse entries in the ACRs must be made in respect of such identified officers for delay in setting up of STPs, sewerage network and its connectivity by the concerned head of the department.

h) The Govt. of NCT, Delhi will be liable to pay Environment

Compensation if defaults take place as under:

- i. The operational deficiencies of the existing STPs must be rectified within three months failing which Environmental compensation of Rs. 5 Lacs per month for STP shall be deposited with CPCB.*
- ii. With regard to works under construction, after 01.07.2020, direction for payment of environmental compensation of Rs. 10 lakhs per month to CPCB for discharging untreated sewage in any drain connected to river Yamuna and Rs. 10 lakhs per month to CPCB per incomplete STP, sewerage network and its connectivity will apply.*
- iii. With regard to the situation where works with regard to STP, sewerage network and its connectivity have not yet started, the Govt. of NCT, Delhi has to pay an Environmental Compensation at the rate of Rs. 10 lakhs per month per STP, Sewerage network and its connectivity after 31.12.2020 for the delay in setting up of the same. It will be open to Govt. of NCT of Delhi to recover the said amount from erring officers/contractors.*

Report of YMC:

Delhi Jal Board produces 935 MGD of fresh water (including 80 MGD of bore well water). Taking 80% of water as sewage generated, the total sewage generated is 748 MGD. The present capacity based on the data from functional STPs and their capacity utilization is as listed below:

- | | | |
|------------------------------------|---|---------|
| 1. Total Sewage generated in Delhi | : | 748 MGD |
| 2. Sewage Treatment Capacity. | : | 597 MGD |
| 3. Treatment being done. | : | 490 MGD |

The Action plan of DJB for setting up STPs, their up-gradation and increasing capacity utilization have been discussed over several meetings with concerned DJB officials as well as smaller one-on-one reviews between September 11.9.19 and 31.12.19 to understand the progress achieved and compliance to the directions of the NGT.

The Minutes of the meeting held on 19.9.19 and 21.10.19 placed at **Annexures – C-4/1 & C-4/2** bring out the issues discussed, assurances sought from DJB and the directions issued by the YMC.

Comments on the Action Plan submitted by DJB.

a. New STPs and Increase in Capacity utilization:

As per the Action Plan submitted by DJB in response to the orders of NGT dated 11.9.19, the Sewage treatment capacity and capacity utilization during the next three years is projected as tabulated below:

Timelines	Dec 2019	June 2020	Dec 2020	Dec 2021	Dec 2022
Treatment Capacity	597	637	637	657	707
Utilization	490	592	607	627	707

As explained by DJB, Coronation pillar STP will be completed & commissioned by 31st July 2020 & start treating 50% of total sewage treatment capacity i.e. 35 MGD (old STPs of 30 MGD capacity will continue till entire the new 70 MGD plant is commissioned). After 31st July, 2020 onwards, the activated sludge will be taken into digesters for anaerobic reaction which generally takes 2-3 months in filling & digestion completely.

The plant will be commissioned and fully functional only by 31st October 2020. DJB has committed to start treating entire 70 MGD sewage discharge by using standby power connection plus power generated from Bio gas at STP itself pending a separate power station being constructed for the Coronation pillar plant.

Rithala STP which is under rehabilitation is likely to be commissioned by December 2021 adding 20 MGD capacity and the construction of the 124 MGD STP at Okhla replacing the old STPs together with the rehabilitation of the Kondli STPs under YAP-III will add another 50 MGD capacity. Taken together, the ongoing projects under construction will result in an additional capacity of 110 MGD. Even after that there will be a gap of 41 MGD in the sewage generated and sewage treatment capacity assuming that the sewage generated remains unchanged. The

DJB also plans to increase capacity utilization to 100% against a capacity utilization of 82%. What technological and efficiency measures would be put in place have not been spelt out by DJB. DJB will need to create measureable benchmarks and milestones to evaluate performance.

b. Short Term measures for Increasing Capacity utilization:

Low capacity utilization in some STPs like the Rohini, Narela, Kapashera, Nilothi , Najafgarh and Yamuna Vihar is mainly due to absence of sewerage network in the catchment of the STPs. Accordingly YMC had asked DJB to prepare a short term plan for better capacity utilization by trapping some drains flowing in the vicinity of the existing STPs. The short term Plan submitted for better conveyance and capacity utilization of the STPs is as given below:

Name of STP	Capacity of STP (in MGD)	Present Utilization (in MGD)	Date by which full capacity will be utilized
Rohini	15	05	30.6.20
Narela	10	04	30.6.20
Kapashera	05	02	Completed
Nilothi Ph I	40	16	15.3.20
Najafgarh	05	02	31.1.20
Yamuna Vihar	45	28	31.3.20

c. Six Monthly Milestones of Projects under Implementation:

On NGT’s directions the YMC had asked the DJB to submit six monthly milestones of the projects under construction for the purpose of monitoring, not merely in terms of percentages but actual milestones reflected in terms of the physical achievements on the ground. The DJB has submitted the six monthly milestones for Kondli, Okhla and Rithala STPs (**Annexure C-4/3 to C-4/6**). YMC will monitor the physical progress achieved with reference to these six monthly milestones.

d. Decentralized STPs

As per the SWM Plan 2031 DJB was required to set up 32 STPs over and above the STPs which are under construction. None of these STPs have been set up so far. Out of the 32 STPs,

14 STPs were to come up in Najafgarh basin. Seven out of 14 have been sanctioned by NMCG in 2017 but land is available only for 2 of these. Land for the remaining 5 STPs is either pending with the Revenue Department or the Land and Buildings Department of GNCTD. YMC held meetings with DDA and Director Panchayats attached to the Divisional Commissioner to expedite the land allotment. The meetings have resulted in vague assurances but the progress has not been given to the YMC. The Committee even organized a joint sitting of the Director Panchayats and the DJB officers as both were giving varying reports about progress. The latest progress has not been given to the YMC and will be pursued. Out of the remaining 7 STPs proposed, though land is available for 4 STPs, administrative and financial approvals are yet to be obtained. There is no clarity about the future of these projects and there has to be a better forecast of projected need which DJB is apparently not able to do at this stage. The interest that an owner Department normally shows has been found lacking.

DJB has plans to set up 42 decentralized STPs additionally in rural areas and unauthorised colonies with a total capacity of 158 MGD. However DJB is not in possession of land for any of these 42 STPs so far. YMC held meetings with the representative of Divisional Commissioner and the DDA officials as 32 of these sites now fall within the urbanized villages. The status of land allotment at 8 places in Najafgarh and 42 places other places is not clear. Also, it is estimated that setting up STPs at 56 locations(42+14) will require a budget of Rs 5800 crores against a budgetary availability of only Rs1000 crores with the DJB. In short, there is a complete lack of clarity on whether and when the DJB will be able to handle sewage from these areas.

A strong direction from NGT to the Chief Secretary GNCTD for providing oversight to these land allotments within a specified period, say, three months is needed.

e. Removal of deficiencies in the functioning of STPs

According to DPCC's report for the month of December 2019, 14 STPs out of 35 functional STPs are non-compliant on one or the other parameter. NGT had directed that DJB should remove the deficiencies in the STPs within a period of one month. The test reports of DPCC, clearly show that no action has been taken by the DJB to rectify the shortcomings in the

STPS. YMC is of the view that there is need for technical audit of the functioning of the STPs through a joint team of CPCB, NEERI and DPCC followed by training the maintenance staff.

f. Commencement of work on all STPs by 31.12.19 and Completion of all the STPs by 31.12.20.

The timelines for the projects under construction clearly show that some projects, namely, Rithala and Okhla will go on well beyond 31.12.20-the timeline set by the NGT for completion of the STPs. DJB has clearly mentioned that the timelines cannot be squeezed as they are bound by contractual agreements. Also work on none of the 56 decentralized STPs has made a beginning so far. There is also no clarity on if and when these projects are likely to commence.

g. Phyto-remediation/Bioremediation of waste water in drains:

The matter was taken up by the Hon'ble NGT on 3.1.2020 and certain directions have been issued. Pursuant to those directions, YMC submitted a report dated 20.1.20 to the NGT on Phyto-remediation technologies and the organizations possessing expertise on the subject. In the said report it was also pointed out that there are multiple agencies in Delhi who have control over the drains and complex jurisdictional issues need to be resolved particularly for handling sewage from a large number of unauthorized colonies whose sewage goes into storm water drains.

After perusing the report of YMC, Hon'ble NGT has issued several directions to the CPCB, GNCTD, DDA and other stakeholders in the order dated 24.1.20. The agencies have been given time until 7.2.20 by NGT and comments thereon will be furnished by YMC after receiving the responses.

Conclusion:

Much of the work on new STPS are at a nascent stage and monitoring at this stage is being done in respect of land allotment issues. A strong direction from NGT to the Chief

Secretary GNCTD is needed to provide oversight to land allotments within a period of three months.

An increase in capacity utilization would need much more capacity building within the organisation. The DJB has not shared any details of the technological and efficiency parameters by which it will achieve this. The DJB was asked to create measurable benchmarks to evaluate progress but this has not been done.

A technical audit of the STPs is required and the Report has indicated how this will be got done.

Chapter – 5

Interceptor Sewer Project (ISP)

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

DJB to put the systems in place for project monitoring so that timelines are adhered to.

- a) DJB is directed to adhere to the timelines with regard to ISP and treat all the 242 MGD sewage by 31.12.2019.*

For failure to comply with the above directions compensation will be payable at the rate of Rs. 5 Lakhs per month till compliance from 01.01.2020. Entries be also made in the service records of the erring officers to fix their responsibility.

Report of YMC:

The Interceptor Project was reviewed with the Officers of DJB on 22.7.19 and 21.10.19. The Minutes of the meeting are attached at **Annexures C-5/1 and C-4/2**.

The project was to be commissioned by 31.12.19 as per the timelines agreed by the DJB. The Board has, however, once again missed the timeline. The reason advanced is that there was a ban on construction imposed by the Hon'ble Supreme Court during the entire months of November and December 2019. The revised time lines for completion of Interceptor sewer Project is 31st March 2020.

As per the project report for the ISP, the flow expected to be trapped was 242 MGD. However with the passage of time a number of new colonies have come up, some colonies have been sewerred and, therefore, there is expected to be change in the volume of flow to be trapped by the ISP. DJB was asked to get the flow measured so as to arrive at the actual quantity of flow likely to be trapped and treated under the project. This has not been done despite directions given by the YMC. It is informed that M/s EIL is doing the study and that the result thereof will be submitted once the measurements are completed. Considering that this is a flagship project on which so much hope has been pinned for containment of sewage in 108 drains flowing into the Najafgarh drain the unwillingness to calculate the increase /decrease in

the flow of sewage as a result of the factors mentioned earlier is not understandable. The assessment is important as all future plans and strategies will largely depend on the level of trapping that the ISP can achieve and treat. For over 2 years the ISP has been held out as a sure shot remedy. If, as was originally intended, the trapping results in substantial capture of sewage it will be a net gain. But if the likely volume is substantially less then strategies to contain the remaining sewage have to be planned for to a commensurate level. This needs to be assessed at the earliest and in any event no later than February 2020. A direction on this is needed as the approach thus far has lacked seriousness.

The Interceptor project will intercept 108 drains and convey the Sewage to STPs for treatment. EIL had earlier submitted a report that in addition to 108 drains there are additional 204 drains that have emerged over the last 8-10 years during the period when the project was under construction. In so far as interception of 204 drains is concerned, it has been stated by DJB, that 34 drains have already been trapped and 96 drains will be trapped by March 2020. For another 45 drains once the Sewerage network in the colonies in the catchment of Najafgarh and Shahdara drains is completed by March 2020, the sewage in these drains will also be trapped and treated at the STPs under the ISP. The remaining 29 drains are proposed to be trapped by December 2020 and 2021 and three drains beyond 2021. The timelines are indicated at **Annexure C-5/2** of the DJB's Action taken report. The information furnished by the DJB will be subjected to an independent verification by the YMC.

In unauthorized colonies where sewerage system has been laid, but sewer connection has not been taken by the consumers, Delhi Govt. has taken a decision to connect these sewer connections free of cost by the DJB for those consumers who apply for household sewer connectivity by March 2020.

Chapter – 6

Repair and maintenance of Drains

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

- a) *The DJB and NDMC to identify and plug the sources of sewage within two months positively and report compliance to Monitoring Committee.*
- b) *Tapping of Drains:*
 - i. *Qudasia bagh+ Mori Gate drain (Flow: 43.2 MLD):DJB to make an assessment of sewage coming from sewerred areas and prepare an action plan with timelines for plugging the discharge into storm water. New STPs be established only for non-sewerred areas.*
 - ii. *Barapulla Drain (Flow: 145.15 MLD): DJB to submit action taken on Action Plan which it had submitted to NGT in 2014 in terms of actions on short term, medium term and long terms measures envisaged.*
 - iii. *Maharani Bagh Drain (30.24 MID):DJB to indicate proposal to stop the flow in the drain with specific timelines in terms of tapping or laying of sewer lines in un-authorised colonies.*
 - iv. *Najafgarh Drain (2056 MID) and Shahdara outfall drain (475 MID): The DJB is directed to attend to the observation of Monitoring Committee so that all the intercepted sewage is treated. The States of Haryana and UP are directed to submit their Action Plan with specific timeline to attend the flow of untreated sewage into said drains.*
 - v. *Status of other storm water drains carrying sewage: The DJB is directed to submit a specific timelines with specific accountability so that no sewage finds its ways from sewerred areas into the storm water drain.*
 - vi. *Status of Punctured Sewers: DJB to ensure that such instances are attended on priority with specific accountability.*
 - vii. *Ameliorative measures for cleaning drains & Constructed Wetlands and In-situ Bioremediation Technology: The Irrigation and Flood Control Department to develop a mechanism of third party verification report on the ameliorative measures undertaken by it.*
 - viii. *Controlled Dredging in River Yamuna: The finding of the study undertaken by NEERI to assess slug deposition on river bed of Yamuna be evaluated and appropriate decisions by undertaken by IFCB (The Irrigation and Flood Control Department).*
- c) *For failures in tapping the drains, environmental compensation at the rate of Rs. 5 lakh per drain per month will be paid by the DJB or concerned department to the CPCB for environmental restoration. Entries in the record of 37 the erring officers also be recorded consistent with the earlier directions.*

Report of YMC:

There are in all 22 drains joining Yamuna downstream of Wazirabad which discharge sewage and industrial waste into the river. Out of 3026 MLD of flow discharged into river Yamuna through all the drains, Najafgarh and Shahdara drain account for about 2438 MLD of sewage (CPCB Report of 2020). With large volume of discharge in these drains and large catchment areas, rather than trapping these drains before they join river Yamuna, the DJB's Plan has been to intercept the sewage flowing in the tributary drains joining Najafgarh and Shahdara drains. The ISP project, which will trap 108 tributary drains joining Najafgarh and Shahdara drains, is now expected to be commissioned by 31.3.2020. However, the drains like drain no. 6, L1, L 2 and Badshahpur from Haryana, Sahibabad, Indirapuri and Noida drains from UP will continue to discharge sewage from these two states into river Yamuna./ The Action Plan of Haryana and UP to trap sewage and industrial waste has been discussed in Chapter 12 and Chapter 13. YMC is separately monitoring this.

The status of sewage from other major drains joining Yamuna is discussed below:

- a. **Sewage from NDMC areas:** Sewage from NDMC areas and the areas under the control of DJB has been found to be discharging into Barapulla drain through the Sunehri bagh drain & Kushak drain. Sunehri Bagh drain, which largely flows through NDMC areas, is reported to be carrying sewage from NDMC and DJB areas in the upstream of the drain. Accordingly, review meetings were held by the YMC with the concerned Agencies. Minutes of the meeting placed at **Annexure – C-6/1& C-6/2.**

NDMC has been asked to submit the action plan for trapping sewage of Sunehri bagh drain. An interim ATR has been submitted by NDMC stating that all the sources of sewage from NDMC areas have been plugged and there is no sewage flowing into Sunehri Bagh drain from NDMC areas. 108 cubic meter per hour (2.59 MLD) of sewage discharge is coming from DJB area from Nehru Nagar in Paharganj area which has to be plugged by them. DJB has submitted that the work had been started, but due to ban on construction in November and December 2019, the work had to be stopped. It is now stated that the work will be completed within a month. Since the Sunehri bagh drain located at the confluence point with Barapulla drain still

carries large volume of sewage, the source will have to be independently verified after DJB and NDMC complete action. There is in addition a Railway colony within NDMC area and responsibility for controlling flow of sewage from there also rests with the NDMC. **NGT may consider issuing directions to NDMC and Railways to jointly stop flow of sewage from all areas under its jurisdiction as otherwise jurisdiction issues will delay action.**

b. Trapping of Drains:

i. Barapulla drain: Delhi Jal Board has proposed STP (20 MGD Capacity) at the outfall point of this drain. YMC had asked NDMC and DJB to trap sewage the Sunheri Bagh and Kushak drains into their sewerage systems respectively as these drains are largely passing through sewered areas. DJB should decide the capacity for an STP at the outfall point for the balance discharge after NDMC and DJB have plugged the leakages referred earlier.

DJB has taken up the matter with DDA for allotment of land for an STP at Barapulla. Despite DDA having agreed to allot land there is no clarity on when the land will actually be allotted. The matter has been hanging fire for several years without any clarity on if and when the allotment and possession of the land will actually be given to DJB. **YMC requests a direction from NGT to the DDA for taking a decision on land allotment within two months as efforts made by YMC have not resulted in a final decision.**

Delhi Jal Board has submitted an action plan for controlling flow of sewage in Barapulla drain. As per the Plan about 14 MGD will be trapped into the sewerage system proposed/ being laid in unauthorized colonies in its command area as per following action plan:

- 70 unauthorised colonies at Saidulajab, Tigri Road, Sangam Vihar,
will be trapped by June 2020 : 6.25 MGD
- 11 Unauthorised colonies at Deoli Road by December 2020.
About 6.50 MGD of sewage will be plugged by June 2020 : 1.25MGD
- After rehabilitation of sewer at Press enclave and Chirag Delhi
areas and trapping of drains at Chirag Delhi by June 2020 : 6.50 MGD

II. **Quadsia & Morigate drains:** Delhi Jal Board plans to set STP of 9 MGD capacity for which requisite land has been sought from DDA. Though the YMC had asked the DJB to trap sewage at source coming from the sewered areas in Chandni Chowk, DJB has ruled out feasibility by stating that since the carrying capacity of Ring Road Trunk sewer and pumping capacity of Ring Road pumping station is inadequate, there is no other option than to set up an additional STP at Morigate to treat the sewage thus reducing the overload of sewage at Okhla STP. The matter of land allotment is pending with DDA. **NGT may consider directing the DDA to finalize allotment and give possession to DJB if in principle approval has been given within next two months.**

iii. **Maharani Bagh drain:** DJB has submitted that out of total 25 MLD discharge, 15 MLD sewage will be trapped after laying the sewerage system in the catchment area of this drain which will be completed by 31.12.2021. DJB has already trapped 10MLD sewage after the rehabilitation of the sewer at CV Raman Marg was completed.

iv. **Najafgarh and Shahdara drains:** As per ATR submitted by DJB 108 drains in the catchment areas of Najafgarh and Shahdara drains are being trapped by the Interceptor sewer. It is estimated that 242 MGD will be trapped out of which 150 MGD has already been trapped. The progress of trapping of drains under ISP has been discussed in Chapter 5_ Interceptor Sewer Project. The discharge coming from UP and Haryana has not been accounted for by DJB. Haryana is discharging around 105 MGD sewage and Industrial effluent into Najafgarh and Supplementary drains through L1, L2, Badshahpur and Drain no.6 which are ultimately meeting up with river Yamuna. Similarly, around 50 MGD is coming from U.P. in drain no. 1 and Gazipur drain through Sahibabad, Indirapuri and Noida drains. The action plan from these two states has been discussed in Chapter 12 and Chapter13.

v. **Remaining Drains:** Out of 17(11+6) major drains discharging sewage in Yamuna the Action Plan for the 4 drains, namely, Barapulla, Maharani bagh, Najafgarh and Shahdara drains has been discussed above. The remaining 13 drains, as per the list below, are said to have been trapped by DJB:

1. Magazine Road
2. Sweepers colony drain

3. Khyber Pass drain
4. Metcalf house drain
5. Tonga Stand drain
6. Moat drain
7. Civil Military drain
8. Delhi Gate drain
9. Dr Sen Nursing Home drain
10. Drain No.14
11. Tughlakabad drain
12. KalkaJi drain
13. Tehkhand drain

As per the discussion with DJB officers, the drains at S.No. 11, 12 & 13 are actually just one drain with different names and the trapping is being done on the upstream side near KalkaJi Extn and Faridabad Road. In contrast the waste water from unsewered areas and jhuggi clusters downstream of the drain gets discharged into the river. DJB was advised to install a Constructed Wetland system at the outfall point of these drains, but no Action Plan has been submitted so far. As per the latest independent inspection report dated 27.1.2020 prepared by Expert Member Mr Tyagi, there is no change in the status report of the drain as given by the DTU team which was commissioned by YMC earlier. (Its report is on the YMC's website).

To summarize, 9 drains are completely trapped, 2 drains are partially trapped and the Action Plan for trapping of remaining drains has been submitted. There are additional observations in the latest report as summarized as below:

Tonga Stand Drain:

- Though this drain has been trapped but waste water from Yamuna Bazar area is still flowing into this drain downstream of the point of trapping. YMC has received no action plan for this from DJB.

Sweepers Colony Drain:

- Jhuggi Jhopri colony of Refugees has been growing at fast pace near Majnu Ka Tilla Gurudwara. In future, a huge faecal discharge is likely to be discharged directly into this drain.

DUSIB will be asked to set up small sewage treatment plant (or through constructed wetlands) so that sewage generated from these Juggis can be treated onsite. **NGT is requested to consider giving a direction on this to GNCT.**

- On other side of this drain, Majnu ka Tilla Gurudwara is also discharging its waste into River or this drain. North DMC and DJB have to see that sewage from the Gurudwara is not allowed to flow into the drain. This is the area which lies on the River front. That is why a single body is needed as enforcement functions require being vigilant and presently DDA, DJB, North MCD are not on the same page as far as pollution control on the river front are concerned. **Even before a River Front Authority comes up a direction may be considered to be given to the three agencies that pollution control has to be a joint responsibility and a system to prevent, deter and prosecute polluters has to be overseen. Names of the nodal officers appointed by the three agencies should be given to YMC and the same officials should attend the monitoring meetings held by YMC. Security guards may be positioned round-the clock to keep vigil and CCTV cameras installed.**

Dr Sen Nursing Home Drain:

DJB & NDMC both will have to stop sewage in Dr Sen Nursing Home Drain by trapping discharge from NDMC area, Railway colonies at State Entry Road and Deen Dayal Upadhyaya Marg. After trapping around 2.2MGD sewage at Dr Sen Nursing Home STP, remaining discharge from Dr Sen Nursing Home is still discharging into River. The discharges from institutions on Deen Dayal Upadhyaya Marg are also to be checked by DJB to ascertain the source and remedial action take through the concerned institutions. **A direction from NGT may be considered that if the discharge in this area is not stopped the senior most engineer of DJB in charge of the area will be held responsible. The defaulting institutions may be dealt with**

under the provisions of law and reported to YMC for which the senior most engineer in charge of the area in MCD would be responsible.

- Delhi Jal Board is constructing Weir across the drain to regulate the flow of waste water into the STP and Sewer line, which is likely to be completed by 29.02.2020. DJB has been advised to keep the height of weir in such a way that after drawing 2.2 MGD sewage into STP, the remaining sewage flows into the Ring Road trunk sewer. There is a Waste Water Pumping Station set up by South DMC which is pumping waste water in the drain coming from Azad Bhawan, I.P. Estate into Sen Nursing Home. YMC will ask South DMC to pump the sewage on the upstream side of proposed weir instead of pumping it into Sen Nursing home drain near the River.
- The waste water from Power Station is also being discharged into this drain. **The quality of waste water needs to be checked by CPCB which YMC will pursue the CPCB but a direction from NGT will help.**

Tehkhand Drain:

The drain has been trapped near Sarita Vihar SPS at Faridabad Road. But effluent from the unsewered areas on the downstream of this drain is being discharged into this drain and outfalls into the river. DJB will be asked to prepare a plan to prevent sewage going into the drain after the point of trapping.

v. Untrapped drains:

In addition to the 11+6 drains, CPCB has also found 7 additional small drains discharging sewage into the river. These are:

1. Sonia Vihar drain
2. Shastri Park drain
3. Kailash nagar drain
4. Abul Fazal drain
5. Jaitpur drain
6. Agra Canal near Okhla
7. Old Agra Canal Okhla

Delhi Jal Board has submitted its action plan at **Annexure-C-6/3** in their ATR. The time line given by DJB extend up to 31.12.2022. These need to be compressed besides taking up alternate methodologies for treatment of sewage in the interim till the trapping in completed or sewer network is provided in the colonies in the catchment of the drains. This will be pursued.

vi. Status of Punctured Sewers joining Storm Water Drains at 79 places.

YMC had asked DJB to submit action Plan to plug 79 points in their sewer network where the sewer lines had been punctured and joined with the storm water drains. As per DJB's Action taken report, 42 points out of 79 points where sewage was flowing into storm water drains by puncturing sewer line have been plugged , two points pertain to DUSIB and one point to DDA. In the remaining points , the work is in progress and will be completed by 31.12.2020 in a phased manner. This will be got independently verified by YMC.

vii. The study on dredging has since been completed by NEERI in collaboration with the IFCD. The report is, however, awaited from NEERI. The study was commissioned in pursuance to Hon'ble NGT's direction for controlled dredging of river Yamuna to remove historical sludge from the river bed deposited due to continuous flow of domestic and industrial waste water going into the river. Only after the findings of the study are received, will the YMC recommend further follow up action.

viii. CPCB has been directed by the Hon'ble Tribunal to prepare representative models of bio/phyto-remediation and submit to YMC and thereafter YMC is required to submit its comments on the models to NGT. This aspect will be attended after the report is received from CPCB.

DJB and other drain owning agencies will be asked by YMC to undertake phyto/bioremediation based on their models/technologies suggested in the report of CPCB.

Chapter – 7

Industrial Pollution & CETPs

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

- a) *DPCC is directed to continue with the survey and monitoring of industries both in confirming and non-confirming areas and take action in accordance with law against polluting units and file report of action three months besides recovery of EC. In case of non-compliance Delhi Govt will be liable to pay Rs. 5 lakh per month from 01.01.2020.*
- b) *As there are 13 Departments responsible for regulating illegal dumping of solid waste and C & D waste in Yamuna and drains leading to Yamuna. The Chief Secretaries, GNCT Delhi is directed to coordinate so an effective mechanism is evolved for stopping of said waste in Yamuna or its drains. In case of non-compliance Delhi Govt will be liable to pay Rs. 1 lakh per month from 01.11.2019 to the CPCB in the manner mentioned earlier. Accountability of the officers may be determined in the manner mentioned earlier. The Committee may monitor this aspect.*

Report of the YMC:

YMC reviewed the matter with DSIIDC, Industries Department and DPCC in meetings held on 18.7.19 and 11.12.19. The Minutes of meeting are enclosed as **Annexure C-7/1 and C-7/2**.

In compliance of the directions issued by the YMC, the DSIIDC has furnished the Action taken report, covering both enforcement aspects and the steps being taken for compliance with environmental standards.

Industries in Conforming Areas/Industrial Clusters;

- I. On the directions of YMC joint survey of 31985 industries in 17 industrial clusters was done jointly with DPCC over the last more than a year. In all 1966 units were found defaulting out of which 1885 units were levied EC of Rs 9.425 crores. So far Rs 5.705 cr has been realized. For the Balance 81 units, DPCC has been asked to take action as these

units fall within the Industrial clusters under DSIIDC. These are Shahdara Manufacturers Association (SMA), SSI Okhla Part I and Part II and Friends Colony.

- II. Random Survey of Bawana and Narela industrial clusters was done between September to December 2019 and 21 industries levied EC of 10.50 lakhs. The EC realized is Rs 3.5 lakhs.
- III. In a survey of 4192 units in 11 Industrial clusters which have non-water consuming industries, 38 units were found non-complying. Against 19.50 lakhs of EC levied the EC so far realized is 9 lakhs.
- IV. For the recovery of unrealized amount of EC, DSIIDC has informed that action for sealing, closure of Industries etc. shall be taken if the environmental compensation is not deposited by them, even after reminders. This will be monitored by the YMC.
- V. Better enforcement has led to an increase of 46% in the effluent reaching the CETPs. Against 44.83 MLD in 2018, the effluent reaching the CETPs has increased to 64.269 MLD. The total capacity of CETPs is 212 MLD.

Industries in Non- Conforming areas:

There are 51837 industries said to be functioning in non conforming/residential areas. A committee under the Chairmanship of Chief Secretary in which DDA, Municipal Commissioners and DPCC are members is monitoring action for closure of industries and submitting periodic reports to the Hon'ble Supreme Court of India. In addition, the Oversight Committee headed by Justice Pratibha Rani is also monitoring directions of the Hon'ble Tribunal on closure of industries in residential/non-conforming areas. YMC is therefore not monitoring this specifically to avoid overlap but considering that, the water polluting industries from amongst these home based industries are discharging the effluent directly into the drains as long as they continue, pollution in the river will remain high. The STPs which treat sewage through biological treatment are unable to treat the effluent which has soaked rich in toxic chemicals, generated by polishing, pickling, dyeing, printing and bleaching industries operating at the household level in the residential/non conforming areas.

NEERI study for upgrading CETPs:

Against an installed capacity of 212 MLD, the present level of effluent received at all the 13 CETPs is only about 70 MLD, which translates into only 33% capacity utilization. Also, most of the CETPs are non-compliant on one or the other parameter. As per the report of DPCC for the month of December, only 4 CETPS out of 13, namely, Okhla, Narela, Bawana and Mayapuri were found meeting prescribed standards. The reports for the other months are not very different.

Accordingly YMC had directed the DSIIDC to undertake a comprehensive study of all the CETPs for their up-gradation, achieving ZLD and examine whether these can be retrofitted to function as STPs. The DSIIDC has now assigned the study to NEERI on 31.7.19.

Though the study is expected to be completed in two years, NEERI has been asked to submit CETP wise report on up-gradation for each CETP separately as and when report on a particular CETP is ready. The first report is expected in about three months. Since there was no clarity on the availability of funds for the up-gradation, DSIIDC has been asked to explore this with CPCB and DPCC under the funds available under EC received for violations within Delhi.

Hazardous Waste management:

DSIIDC had issued the Letter of Commencement to M/s Tamil Nadu Waste Management Ltd. on 18.12.2019. Terms of Reference (TOR) submitted by M/s Tamil Nadu Waste Management Ltd. to the Ministry of Environment, Forest and Climate Change (MoEF&CC) were placed before Expert Appraisal Committee (EAC) and have since been approved on 06.01.2020. The Environmental Impact Assessment (EIA) has also been conducted and EIA report is under preparation. After receipt of the report and Public Hearing, the final EIA report shall be submitted to Ministry of Environment, Forest and Climate Change for grant of Environmental clearance. This being a statutory requirement, only after grant of EC can the project commence on the ground. YMC will monitor this.

Chapter – 8

Sewage and Faecal Sludge Management

Sewage and Faecal Sludge Management and Levy of Environmental Compensation

- a) *An incremental progress of collecting 2 MGD of septage in 120 days needs to be quantified by DJB in terms of the number of households with pit latrines, map the SPS' where the collected septage has to be deposited colony wise and sub-district wise and monitor licenses issued at a disaggregated level. DJB to assign responsibility to an organisation which can collect and furnish incremental progress.*
- b) *DJB may prepare an Action Plan for providing unauthorized colonies with sewerage systems.*
- c) *Govt. of NCT Delhi, DJB, DMCs and DDA to collectively undertake advance planning for location of STPs, SPS', peripheral and trunk lines before new populations settle in.*
- d) *Chief Secretary, Govt. of NCT Delhi make it mandatory for those provided with piped water supply and those having a sewage conveyance system in the vicinity to take sewer connections.*
- e) *Chief Secretary, Govt. of NCT Delhi, DJB and DMCs to introduce the regime of levy sewerage charges as presently no such charges are being levied within two months including areas where network has been laid (whole of East Delhi).*
- f) *Considering that tens of thousands of households spew their garbage into the storm water drains and pay nothing for the environmental damage caused, the CEO, DJB and DMCs to ensure sewer connectivity where sewer network has been laid before 31.12.2019 failing which both these agencies shall be saddled with environment compensation to the tune of Rs. 10 lakh per month and disciplinary action against the Zonal Officer responsible for his zone.*
- g) *The Chief Secretary, GNCT Delhi, DJB and DMCs to ensure that a mechanism is evolved where by raw sewage from unauthorized colonies gets collected and taken to some central STP facility for treatment till the time sewer line network is laid in unauthorized colonies within three months and six months thereafter ensure implementation of laying of sewer line network failing which Environmental Compensation of Rs. 10 lacs per month shall be levied on each of them.*
- h) *An institutional mechanism be established by the Chief Secretaries, GNCT Delhi, DJB and DMCs whereby the collection, transportation and disposal of septic tank waste is monitored.*
- i) *Accountability of the officers may be determined in the manner mentioned earlier. The Committee may monitor this aspect.*

Report of YMC:

There are 1797 unauthorized colonies in Delhi having a population of 40 lakhs. Another about 20 lakh people live in slums and Jhuggis. These unauthorized colonies and Jhuggis have come up on Government and other public lands or illegally on agricultural land without any planning and attendant sanitation infrastructure. Though over the years the DJB has provided piped water supply to 1471 colonies and sewer network to 436 colonies the remaining 1361 unsewered colonies continue to discharge their sewage and even septage into drains leading to the river Yamuna. Most of the slums and Jhuggis are serviced by community latrines run by the Delhi Urban Slum Improvement Board (DUSIB) – but the coverage and efficiency of the arrangements are reported to be of varying standards. Moreover these areas release grey water using the drains going into river Yamuna.

The issue of sewage management generated by unplanned/unauthorized colonies and slums/jhuggis where about 40% -50% of the population of Delhi resides is a major source of pollution as the sewage is released directly into open drains. The response of DJB, as noticed in all the meetings of YMC ever since the first meeting held on 8.8.18, has been that sewer network has been planned as a long term solution and in the short term it is planned to intercept the sewage at the outfall point of drain, and convey it through trunk sewer to the STPs. The Interceptor Sewer Project, a flagship project of DJB, which has missed multiple deadlines, has been touted as a panacea for all the sewage related problems of the unauthorized colonies. It was expected to cover the entire Najafgarh and Shahdara basins which account for more than 2/3rd of sewage flowing into river Yamuna. The project is now expected to be commissioned by 31.3.2020 though some of the STPs linked to this project are still at the stage of rehabilitation and therefore some of the sewage will continue to be treated in the old STPs which remain non-compliant. Not only this, it now turns out that over and above the 108 drains proposed to be trapped by the Interceptor project another 204 drains have been located by EIL in a Survey carried out at the instance of DJB. DJB has prepared an Action Plan to control sewage in these 204 drains also.

The DJB under the Sewage Master Plan (SMP) 2031 envisaged setting up 32 STPs (the number has since increased to 56, with a total planned capacity of 158 MGD) to cater to the rural areas and unauthorized colonies in outer Delhi areas. However, all 56 planned STPs are stuck as land has only been allotted for only 6. The pursuit of land allotment does not appear to be receiving attention as even the land for which funds were allotted by NMCG have not been allotted/ taken possession of. YMC has held several meetings to fast track land allotment of 57 SPS/STPs projects but despite assurances from the Divisional Commissioner's office, DDA the actual allotment seems to be caught up in long drawn processes.

Pursuant to the directions of NGT in its order dated 11.9.19 when the DJB was asked about its plan for in-situ phyto remediation/bioremediation pending setting up of STPs, the response of the Board is that none of the drains belong to them and therefore In-situ phyto-remediation if required to be done can only be done by the drain owning agencies. The net result is that presently there is no clarity on when the sewage from unauthorized colonies will be treated in STPs. All short-term measures are negated on the plea that the drains are not under their control and hence there is no mandate to deal with the sewage flowing in the storm water drains. Besides they have no mandate or wherewithal to collect the sewage in the drains adjacent to the unauthorized colonies. This issue has been discussed in a separate report sent to the NGT on 20.1.20.

Planning for laying of sewerage network in Unauthorized colonies is not only logistically challenging but even after being laid the individual households have either resorted to taking connections illegally or have not taken any connection at all, resulting in not only loss to the exchequer but also sewage continuing to flow into the drains. The progress of laying sewerage network and future plans are as under;

Sewerage system laid and notified:	436 colonies
Sewerage system being laid and to be completed by 2022:	544 colonies
Tenders invited and work to be completed by 2023:	116 colonies
NOC awaited from colonies falling in O zone:	96 colonies

Colonies where sewerage system is not yet planned:

611 colonies

On the question of treatment of Sewage/Septage generated in unauthorized/authorised colonies, the following aspects need consideration:

- i. There are 436 colonies which have been seweraged, however, even within these colonies as many as 2.3 lakhs household had either not taken any sewer connection or had illegally got connected to Sewer network. There were colonies like West Jyoti Nagar where only about 12% household had taken sewer connection. The DJB has now decided to provide free sewer connectivity under the Mukhya Mantri Free Sewer scheme and also regularize illegal connections by 31.3.2020. As per the Action Taken report so far 70,900 consumers out of 2.34 lakhs households have taken connection. YMC will monitor the progress achieved in all households getting sewer connections. However, while providing sewer connectivity DJB must ensure that not only black water (Fecal discharge) but all sewage water (including grey water) should be connected to the sewer network -else even after household sewer connectivity some sewage will continue to flow into the drains.
- ii. In the remaining 1361 unauthorized colonies which are proposed to be seweraged over the next few years progress is linked to availability of land and funds and there is presently no blueprint listing the colonies and drains passing through these colonies. Unless the YMC has access to which drains have been trapped under ISP and which drains are to be trapped in the next phase colony wise and drain wise progress cannot be measured. Also, residents in 990 out of 1361 colonies which have piped water supply do not pay for sewage at all even if the water consumption exceeds 20 KL per month as these colonies have not been formally notified as seweraged colonies. In other words, lakhs of residents in these unsewered colonies continue to release their sewage into drains, cause pollution and do not pay anything as sewerage charges. While GNCT as a part of its welfare policy has chosen to supply free water up-to 20 KL/month per family, it is questionable whether households should be exempt from paying sewerage charges despite polluting the drains and ultimately the ground water and the river. Whether the state should subsidize polluters and ought not the polluters pay principle apply are

moot points which the YMC cannot address but these are highlighted as they affect the basic tenets of civic life and the fundamental duties of the authorities in charge to deter pollution of the environment.

- iii. Hon'ble NGT's order at para (e) above clearly directs the GNCTD to introduce within a period of two months a regime of levying sewerage charges as presently no sewerage charges are being levied, meaning thereby that it should be for all the household regardless of whether the area is sewered or not to have to pay sewage charges. This had been stated unequivocally in the order dated 8.5.2015 of the Tribunal. In the latest order referred to para (e) above the use of the phrase "including where sewer network has been provided" confirms that everyone who has water supply provided by the state should be made to pay sewerage charges.
- iv. YMC has not received any response from GNCT Delhi as a response to the NGT directions on levying sewerage charges on every household which has been provided piped water regardless of the quantum of consumption. YMC is not aware if the Board has even considered the directions of the Tribunal and taken a stand on this although it has been highlighted in meetings with the CEO DJB, the Principal Secretary UD and the Chief Secretary when the directions of the Tribunal were read over in full. YMC is of the view that there is failure in complying with the orders of the Tribunal.
- v. Even in planned colonies like Greater Kailash, Rohini, Dwarka, Vasant Kunj under the 20 KL/month free water scheme almost 50% of the households who consume less than 20 KL/month neither pay for water nor for sewerage. The details are available in the Supplementary Report of the 2nd Interim Report filed by the YMC before the Tribunal on 2.7.19. of the YMC Even though the state policy is to give free water even to the well off segments of society if they restrict water usage within the limits prescribed, Whether affluent colonies that use the civic services should be additionally exempt from paying for sewage conveyance and treatment is questionable as it propagates laxity towards the environment. This policy is contrary to directions of the Tribunal at para(e) above.
- vi. Implementation of Septage Regulation 2018 brought in after constant prodding by the YMC has also been lack lustre. So far only about 3 lakh liters per day is collected through

about 140 vendors registered with the DJB against about 6 million liters of septage generated every day. In the majority of districts there is no collection of sewage from pit latrines which means the old system of unregistered vendors discharging septage into drains continues. Enforcement is weak verging on being non-existent. The responsibility for enforcement lies with District Magistrates. They however complain of lack of participation by DJB officials in meetings called by the DMs. Despite YMC asking the Urban Development Department of the data on households using onsite sanitation system of septic tanks and those releasing directly into the drains, there is no authentic information and in the last meeting held in 17.12.19 not even an agency had been appointed to collect the data. Without quantification of households with or without pit latrines nothing worthwhile can be planned. The Mukhya Mantri Free Septage collection Scheme will only apply to those having pit latrines and what is proposed for other households is not known. There is also no clarity on how the DJB or the Urban Development Department proposes to control the flow of grey water from unauthorized colonies. The Septage Regulations do not refer to this aspect which also contributes to pollution.

Environmental Compensation:

The Statement of Enforcement action against pollution in the drains taken by different Municipal Corporations and other drain owning agencies is tabulated below:

March 2019 to December 2019

Agency	EC imposed (in Lacs)	EC realised (in Lacs)	Remarks
SDMC	40.50	1.00	There is a huge gap between EC imposed and EC realised. The authorities shall be asked to recover the balance amount.
EDMC	33.11	1.55	
North DMC	32.74	33.34	
PWD	29.15	-	
DSIIDC	420.64	312.84	
DCB	1.50	-	

I&FC	204 cases	-	I&FC has forwarded 204 cases to DMCs for taking enforcement action.
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The Realization in South DMC and East DMC is extremely poor. YMC has asked the UD and DMCs to evolve credible mechanism for improving realization of EC levied on the offenders. The response however is ambivalent except in case of North DMC. The matter was also brought up in the meeting taken by the Chief Secretary on 8.1.20. In the absence of the response of GNCT Delhi, to the Tribunal's order dated 11.9 19, YMC is not in a position to comment further. YMC recommends Chief Secretary being directed to fix accountabilities of the officers for the lackadaisical implementation of the Polluter Pays Principle so far as pollution in the drains is concerned.

Chapter - 9

Online Monitoring System

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

Regular calibration of OLMS in Sewage Treatment Plants and CETPs to validate sensor results with lab results to be overseen by DPCC and DJB and report submitted to the Chief Secretary, Delhi and Monitoring Committee on quarterly basis.

Report of YMC

CETPs

There are 13 CETPs which are under operation in 17 industrial estates under the overall supervision of DSIIDC. It has been confirmed that all the 13 CETPs have installed OLMS and have been connected to the servers of DPCC and CPCB as was directed by NGT and monitored by the YMC. On the directions of YMC, the DSIIDC has additionally installed flow meters at the inlet of the CETPs and these flow meters have been linked to the servers of DPCC and CPCB. On the question of calibration since neither the CETPs nor the DSIIDC have a dedicated laboratory of their own and nor do they have a tie up with any NABL laboratory the YMC had directed that calibration of OLMS should periodically be done as prescribed in the CPCB guidelines. (MOM dated 22.7.19 attached as **(Annexure C-7/1)** DSIIDC has now confirmed that each CETP has been directed to have a tie up with NABL laboratory for the purpose of manual testing of samples collected from the CETPs undertaking periodic calibration. The DSIIDC has also informed that they have prepared a standard operating procedure according to which the alerts as and when received through OLMS are attended at the management level.

On the direction of YMC, DPCC has furnished a report on the results of laboratory tests and OLMS results for different CETPs. The tabular statement below will show that the difference in some cases is as high as 200% - 300% between the lab results and those observed through the OLM system. The wide variation between the lab results and OLMS puts a question mark on the credibility of OLMs as a monitoring mechanism. Though some variation due to absence of calibration cannot be ruled out, however, the variation being very large, the matter

needs to be examined in much more detail. The Industries Commissioner and the DPCC have immense authority to see that a mechanical approach being adopted by the agencies involved is corrected. If the purpose of OLMS, which was to provide timely alerts to assist in making prompt correction, is not being served the supervisory authorities have to assert themselves. YMC will report progress to NGT but the absence of professionalism in dealing with an environmentally burning subject of untreated discharge may be noted.

YMC has asked the CPCB to undertake a technical audit of the OLMS and submit a report. The CPCB report is awaited.

Report of DPCC regarding CETPs

S.No.	Name of the CETP	Lab Results			OLMS Results			Remarks
		TSS	COD	BOD	TSS	COD	BOD	
1	Wazirpur	56	92	30	15.1	90.0	23.1	
2	Shahdara Manufacturer Association (SMA)	60	132	42	39.13	81.7	9.72	300% difference in BOD and 90% in TSS
3	Okhla	48	96	30	21.308	132.32	25.641	More than 100% in TSS
4	Narela	42	84	28	186.8	202.5	50.5	90% diff in BOD
5	Naraiyna	-	-	-	-	-	-	
6	Nangloi	84	212	68	77.1	73.8	21.8	200% diff in BOD
7	Mangolpuri	68	148	48	48.1	83.0	27.6	90% diff in BOD
8	Lawrence Road	146	216	72	61.03	86.62	23.07	300% diff in BOD
9	Jhilmil	58	236	32	-	-	-	
10	Bawana	46	120	28	47	84.25	27.44	
11	Baadli	64	168	56	21.0	89.2	14.3	300% diff in BOD
12	GT Karnal Road (GTK)	80	130	48	43.81	121.96	25.47	95% diff in BOD
13	Mayapuri	52	92	30	21.4	58.1	15	100% diff in BOD

OLMS in Sewage Treatment Plants(STPs)

All the 35STPs are now connected to the OLMS and calibration is done through the service provider. DPCC has furnished report in respect of the results obtained through Lab tests and those observed through OLMS in respect of 28 STPs. It may be seen from the tabulated statement below that there is a huge difference between the OLMS results and those observed through lab tests. This is observed despite DJB's claim that the calibration is being done periodically. The report of CPCB who have been asked to undertake a technical audit of OLMS is awaited. If the variation between the OLMS and Lab results persists, the desirability of OLMS as a monitoring tool will have to be re-examined by the CPCB and corrective measures suggested which fool proof are.

NGT may consider passing appropriate order in this behalf.

Report of DPCC regarding STPs

S.No	Name of the STP	Lab Results			OLMS Results			Remarks
		TSS	BOD	COD	TSS	BOD	COD	
1	Molarband Mini STP	46	34	92	18.07	26.41	75.57	150% diff in TSS
2	Coronation Pillar, Phase 1 and 2	44	36	96	-	-	-	
3	Coronation Pillar, Phase 3	64	42	124	51.96	39.04	105.71	
4	Delhi Gate Phase I and II (15)	4	2	8	6.69	4.74	17.24	More than 100% difference in COD and BOD
5	Keshopur (New)	38	26	72	4.29	5.94	3.19	Huge difference in BOD and COD
6	Keshopur	56	38	112	120.56	75.27	207.91	More than 100% difference in TSS, BOD and COD
7	Sen Nursing Home (SNH)	8	6	24	7.77	5.33	23.81	
9	Niloti STP- II	8	6	18	7.64	1.47	25.25	
10	Niloti STP	-	-	-	-	-	-	

11	Najafgarh	78	46	128	39.71	44.03	123.48	
12	Rithala	26	14	44	14.09	10.57	45.03	
13	Pappankalan STP	74	46	124	55.33	27.74	78.99	80% diff in BOD
14	Pappankalan STP -II	12	8	28	5.63	6.05	35.69	More than 100%??difference in TSS
15	Rohini	16	10	32	-	-	-	
16	Narela	42	34	96	29.71	21.84	88.66	
17	Okhla (New)	4	2	8	-	-	-	
18	Kondli	18	16	44	23.44	10.64	31.94	
19	Kondli New	16	12	44	18.38	9.25	36.70	
20	Kapasheda	14	8	24	-	-	-	
21	Yamuna Vihar (Phase III)	28	22	68	44.92	39.14	93.68	More than 60% diff in TSS
22	Chilla	8	6	20	12.13	8.67	33.88	
23	Akshardham	6	4	16	1.74	1.38	3.72	
24	Mehrauli	48	36	104	71.16	25.46	87.30	
25	Vasant Kunj	52	46	120	11.62	7.93	23.47	
26	Yamuna Vihar	64	42	120	-	-	-	
27	Okhla STP	30	22	64	20.57	12.39	35.44	90% diff in COD
28	Delhi Gate Phase I, II (2.2)	8	4	16				

Conclusion

The OLMS was got installed and made operational for CETPs and STPs after several monitoring meetings. It took more than one year to reach this stage. Assurances were always given but the outcomes leave a lot to be desired. Systems alone cannot result in analysis, trouble- shooting and correctives. There has to be a willingness to look at the results, question such high discrepancies and to introduce correction. More importantly the OLMS and lab verification are mere tools to assist quality control and

maintenance engineers from the industries or project/ STP in charges have to become accountable if such variation persists which makes the whole process perfunctory. Apart from conducting the technical audits, CPCB needs to see that engineers get trained in using these tools to management much more professionally.

NGT may consider directing that the OLMS system has to be checked constantly and if such wide variation continues it is a reflection of the professionalism of the supervisory staff and NGT will not hesitate to hold the senior most engineers and project staff responsible. The MD DSIIDC, CEO DJB have to improve the system and make available names of the key personnel and of the vending agency to the YMC which will report on progress.

CHAPTER - 10

Use of treated waste water

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

DJB and park owning societies like DDA, DMCs, PWD to mandatorily use the treated water from STPs for all parks within 5 km radius of STPs and pending laying of pipelines, such treated water to be transported through tankers. Compliance be reported by 31.12.2019 failing which DJB, DDA, DMCs, PWD and others shall each be charged Environmental Compensation at the rate of Rs. 5 lakh per month till compliance is reported. This shall be overseen by the Chief Secretary, Govt. of NCT, Delhi and the Monitoring Committee as this colossal waste of treated water cannot be allowed.

Report of YMC

DJB generates about 500 MGD of treated waste water from its 35 functional STPs. Out of this, about 90 MGD is used for irrigating parks and gardens including 9.50 MGD of treated waste water being used for the PPCL Power plants for cooling purposes. The rest of the treated waste water is released in the drains with untreated sewage which eventually joins Yamuna.

The YMC had identified use of treated waste water as one of the important activities so as to promote better utilization of treated waste water, some of which is of a standard fit enough for a number of non potable uses. The DJB was, in consultation with different stake holders, also directed to prepare an action plan for use of treated waste water as well as to give mile stones to be achieved in short, medium and long term. One of the short term measures suggested by YMC was that, all parks and gardens belonging to different agencies like DDA, DMCs, PWD etc. located within a radius of 5 KM of existing STPs should mandatorily use treated waste water for irrigation, and pending laying of pipelines, such treated waste water should be lifted through tankers by all park owning agencies.

This measure was also suggested in the light of the alarming decline in the water level in Delhi. Out of 34 blocks in Delhi, 22 are already categorized as "over-exploited", 8 are "critical/

semi-critical" and only 4 blocks are categorized as "safe" by the Central Ground Water Board (CGWB) in its report of 2017. At the macro level the CGWB report of 2017 also brings out that against a recharge of 0.32 bcm, the withdrawal is 0.36 bcm and ground water extraction has been pegged at 120%. In other words, the excess withdrawal of ground water per year is of the order of 0.04 bcm (about 24 MGD). The Hon'ble NGT while taking on record the recommendations of YMC had directed that all the parks owning agencies should start using treated waste water in lieu of ground water and make arrangement of transportation through tankers. The issue was also discussed in a series of meetings with park owning agencies held on 19th, 26th and 30th December 2019 (**Annexure-C-10/1**). Initially there was considerable reluctance and even DJB appeared not to be serious as the amount of water to be lifted and used in the parks would cover just a fraction of the treated waste water. Even so the YMC explained that the idea had been mooted by one of the Municipal Corporations as it helps to let the ground water table to get replenished and gives a message to the public that Government is serious about water conservation while exhorting private citizens to conserve water. Subsequent to the meetings held with major stake holders the information as received from them pursuant to the orders of NGT has been compiled and is tabulated below:

S.No	Name of the Stake holder Department	No. of Parks	Requirement of treated effluent (MLD)	No. of 10 KL Tankers required @10 trips per day
1	SDMC	5347	16.198 (16000KLD)	160
2	EDMC	1076	5.735 (6000 KLD)	60
3	NDMC	35	5.000(5000 KLD)	50
4	North DMC	4331	19.961(20000 KLD)	200
5	CPWD	136	28.244(28000 KLD)	280
6	DDA	129	16.608(17000 KLD)	170
7	DUSIB (Shishu Vatika)	226	0.303(30 KLD)	01
8	ASI	55	6.752(7000 KLD)	70
	Total	11335		991

Number of Borewells Sealed and Tankers Deployed

Agency	Total no. of parks	No. of parks within 5 km of STP	No. of parks irrigated by treated waste water	No. of tankers engaged	No. of Tube-wells closed	Whether the Tube-wells closed were /functional or defunct	Remarks
SDMC	6803	1966	352	9	123	Functional	—
EDMC	1076	444	372	40	473	Defunct & Functional	In 72 No. of Parks treated waste water could not be transported due to narrow lanes
North DMC	401	401	401	16	99	Functional	
DCB	18 parks plus 10 green strips along the road	Nil	3green strips of about 5 Acres area.	4 Tanker of 8000 Ltrs. Each	01	Functional	Treated waste water from MES STPs being used
DDA	810	129	126 (73 through DJB line, 53 through tankers)	134	181	Defunct	
NDMC	15	15	15	02	02	01 Working 01 Defunct	
Forest	20	03	18	56	21	20 Defunct 01 Working	

From the statement above it is observed that there are in all 11,335 parks within 5 KM radius of the STPs which belong to Government agencies. If all these gardens are supplied treated waste water through tankers the total usage of treated waste water would be of the order of 22 MGD and would require 991 tankers per day. In addition the Department of Forest and Wild Life which presently uses 54 tankers for its nurseries and plantation activities can use treated waste water.

The DJB has in consultation with different stake holders prepared an estimate for laying pipelines to different parks and gardens. The total estimated cost is of the order of Rs. 850 crores of which the cost for the Forest Department alone is in excess of Rs 500 crores. The YMC, however, does not support the proposal of incurring such high capital cost on creating infrastructure of dedicated pipelines for treated waste water and recommends that alternatives should be explored before going in for pipelines over long distances. Such projects will require extensive digging and will add to dust pollution and inconvenience citizens .

DDA has stated that pipelines have been laid in 73 parks leading to closure of 181 bore-wells. Another 143 parks are proposed to be covered with pipeline and will result in closure of 123 bore-wells in next 6 to 15 months. DDA also has planned to set up 20 small sized STPs in next 2-6 months leading to closure of 30 bore-wells. In the second phase 106 STPs are proposed in 6-12 months which will result in closure of 197 bore-wells and in the third phase 100 STPs are proposed to be established leading to closure of 158 bore-wells.

DDA also has plans to use the technology of constructed wetlands to replicate NeelaHauz Model in parks that are receiving water from STPS which is not of very good quality and undertake in-situ phyto/bio-remediation and polishing before its use for irrigation. YMC will monitor this and also direct other agencies to follow the approach of DDA.

The DJB has also proposed the following policy initiatives for enhanced utilization of treated waste water:

1. 70 MGD of water from Coronation STP after micro filtration is proposed to be conveyed to Palla and thereafter released into in the River Yamuna for treatment at Wazirabad Water Treatment Plant. DJB has sought approval of Upper Yamuna River Board (UYRB) where it is pending presently. The YMC had earlier recommended that this proposal needs examination by some expert body considering treated waste water after being subjected to microfiltration is proposed to be used for drinking purposes. This requires study from scientific as well as social acceptability aspects.

2. DJB also proposes to trade 20 MGD out of 51 cusecs of fresh water of Yamuna at Auchandi and Jaunti Regulator with the state of Haryana and in lieu thereof provide treated waste water.
3. DJB has another proposal DJB for supply of treated water to UP Irrigation Department and in lieu thereof seek 112 MGD of fresh water from the share of the state of UP. A request has been made to the UP Irrigation Department and Rs 70 lakhs released for a feasibility study for this exchange of treated water in lieu of the fresh water out of the share of UP Government. YMC has not received any formal views of UYRB on this.
4. DJB's proposal also includes release of 267 MGD of water in the river Yamuna as return flow which is stated to be in terms of water sharing agreement. However YMC has not been furnished the details of the clauses of the agreement and whether it is mandatorily required to supply only treated waste water or even untreated water could also meet the requirement of the Agreement. This was sought by YMC several times in meetings but is not being shared.

YMC recommends the following for increased utilization of Treated waste water:

1. Construction and installation of de-centralized modular STPs of KLD capacity range adjacent to parks and gardens using sewage flowing in the drains or erected along the sewer lines as has been done by the SDMC in Vasant Kunj Park and few other areas
2. Creating root zone treatment system in vacant portions of the parks and gardens by diverting sewage in the drains from the man- holes. This will have both demonstrative effect and help meet water needs of the parks without resorting to use of machinery. DDA proposes to undertake phyto-bioremediation in parks/gardens where the treated waste water received from DJB is not of good quality. The Phyto/Bio-remediation will help polish the treated waste water to better standards.
3. Other bulk users of water like the Railways, DMRC, Transport Department should also be directed to use treated waste water for washings and construction, if required after further polishing in lieu of ground water presently being used. **YMC can monitor this if there is an NGT direction as these bodies have not generally shown any enthusiasm to attend meetings called on this subject.**

4. DJB needs to work with Divisional Commissioner and the 11 District Magistrates to see that awareness is built among the RWAs. It would be very effective if NGT were to pass an order on this which would enable the residents to take it seriously and understand the logic behind the move and why their cooperation is needed.
5. The bad odour from the treated waste water, high mineral content and presence of FC which are harmful to plant growth and human health becomes the bone of contention and DJB must see that public fears are addressed and allayed properly through the District Magistrates and also the MCDs which are in charge of conservancy. There is a need for a direction as this becomes no man's land and results in the park owning agencies refusing to use the water. There has to be a benchmark and an independent agency which tests the water quality being supplied which would allay public resistance and end the disputes about quality of water being supplied for parks.

Chapter - 11

Idol Immersion during Ganesh and Durga Festivals in Delhi

Directions of the Hon'ble National Green Tribunal (NGT) dated 26.7.18

The mandate of the Monitoring Committee is to ensure requisite level of standard of water at the entry point and the exit point of river Yamuna as well as the in drains which meet river Yamuna so that there are no pollutants beyond the determined standards.

The Committee will also issue directions to deal with the problems of idol immersion in the river Yamuna taking into account the guidelines of the CPCB to ensure that no pollution is caused in Yamuna at Delhi.

Report of YMC:

History of previous directions of NGT and YMC's monitoring thereon from September 2018 onwards.

By the time the YMC took charge on 4.8.18 2018 efforts to prevent the practice of idol immersion in the River Yamuna could not make a dent on a situation as it had become an annual practice and there was poor receptivity from all stakeholders like the District Magistrates who had nodal responsibility for management of the procession and the immersions. Meanwhile reports from CPCB and DPCC had pointed to an enormous increase in toxicity levels caused by the presence of heavy metals. Post-immersion, the chromium content increased by 11 times from the Bureau of Indian Standards (BIS) limit of 0.05mg/l, while the iron concentration shot up 71 times compared with the BIS standard of 0.3mg/l. Similarly, the nickel and lead content also increased substantially.

It was apparent that the authorities under the nodal responsibility of the Divisional Commissioner were following a set drill in a routine manner without much concern for the pollution related aspects. Public convenience was given overriding importance with hardly any emphasis on protecting the river from the pollution caused by human footfalls and idol immersion. YMC took a boat ride along the banks of the river and from ghat to ghat and observed that the prevailing system was confined to erecting bamboo barricades inside the

river and permitting devotees to step into the river and immerse the idols. There were 10 ghats where idol immersion during Ganesh Chaturthi and 7 ghats where idol immersions during Durga Pooja were permitted and in fact facilitated. The hoardings near the immersion sites were generic in character and did not convey the need to completely stop pollution in the river. The idol's clothes and pooja remnants were required to be removed by the devotees before immersion and spread for drying on the bank of the river to be collected in due course by the municipal authorities. During September 2018 the newspapers were rife with photographs and stories about heavily painted idols, pooja samagri, idol's clothes, plastic bags and flowers floating in the river or lying on the banks of the river because the DMCs had not removed the material.

Factors that helped in moving to artificial ponds in the festival season of 2019.

YMC realised that the level of ownership for stopping pollution was weak and the idea of pond based immersion was negated by most officers giving one argument or the other. The YMC started a series of meetings by asking the Divisional Commissioner and other authorities like DMCs, IFCD, DDA, CPCB and DPCC how the NGT's orders and CPCB's findings ignored. The following aspects were emphasized as they were essential to achieve any measure of improvement:

1. YMC stressed that a Government notification was needed expressly directing that only designated ponds would be permitted to be used for immersion.
2. Undertakings needed to be obtained from the organizers of the Ganesh/Pooja pandals to adhere to the CPCB guidelines.
3. Delhi needed to create sufficient artificial ponds by district looking at past data of immersions.
4. GNCT Delhi and regulatory bodies had to proactively propagate the use of colony pits by building public awareness through the RWAs.

The YMC got in touch with the Surat city Police Commissioner who explained their success in preventing over 60,000 idols being immersed in the Tapti River in Surat, Gujarat. These details were shared with the Divisional Commissioner who then had a detailed plan

prepared. For the first time the Divisional Commissioner was asked to see that the entry of POP *murties* from the neighboring districts should be checked. The YMC at his request wrote to the Chief Secretaries of UP and Haryana to depute the DMs of neighboring NCR districts to attend a meeting with the Divisional Commissioner by using NGT's orders as the basis for making the request. The progress was regularly monitored YMC nearer the festival season when all stakeholders were asked about their responsibilities and state of preparedness.

Trend Analysis for the Years 2018 and 2019

The Reports received from DPCC and the Divisional Commissioner's office are on the YMC website under Key Communications. The findings show a significant reduction in almost all parameters at all stations as no toxic metals/ paints dyes and chemicals were allowed to enter the water in 2019. The samples were taken from a depth of 0.3 meters and collected pre and post immersion. All the key quality parameters, namely, like pH, DO, BOD, COD, TSS, TDS and heavy metals i.e. Copper, Chromium, lead, Zinc, Iron, Cadmium and Nickel were tested at the DPCC laboratory. The detailed report is on the YMC website dated 20.11.19 under the link "Key Communications".

- During Ganesh idol immersion water quality of river Yamuna was found to be less polluted (except Hathi Ghat) in the year 2019 w.r.t. BOD, COD, TSS & Toxic Metals as compared to year 2018.
- During Durga idol immersion water quality of river Yamuna was found to be less polluted (except Kalindi Ghat) in the year 2019 w.r.t. BOD, COD, TSS & Toxic Metals as compared to year 2018.
- Results indicate that the water quality of river Yamuna in year 2019 on the occasion of idol immersion during Ganesh Chaturthi & Durga Pooja was significantly less polluted than in 2018. Hence, idol immersion done in artificial pond had a positive impact on the quality of Yamuna river water.

Reasons for Relative Success of Idol Immersion in Ponds:

After the ban on immersion of idol in river Yamuna, for the first time devotees in Delhi immersed clay idols of Ganesh & Goddess Durga. This reflects a strong signal that banning idol

immersion in the Yamuna was effective in preventing contamination of the river. There were many firsts which are summarised below:

1. For the first time the DPCC issued a direction under Section 5 of the Environment Protection Act 1986 making it incumbent on the idol makers, sellers, Pooja sanities, local bodies/ authorities to comply with the NGT's order places as **Annexure – C-11/1**.
2. For the first time 116 ponds were erected for Ganesh immersion and 89 for Durga immersion.
3. DJB provided clean water to fill the ponds.
4. Around 24,000 idols were immersed by over 20,000 people.
5. After immersion all ponds were emptied by the DJB and the MCDs.
6. Monitoring was done at 10 ghats for Ganesh visarjan and 7 Ghats for Durga visarjan.
7. Awareness advertisements and public notices regarding idol immersion were published in 11 newspapers from 9.8.19 to 12.9.19 for *Ganesh visarjan* .and from 15.9.19 to 18.9.19 for *Durga visarjan*.
8. Public Awareness campaigns included hoardings, bus wraps in 50 AC and 40 non-AC buses,40 Bus Queue shelters 50 Metro rail panels/ Bridges, Duct Panels, Metro pillars/Wall wraps/Foot over Bridges, Steel Street Furniture, Police Booths, Information Panels and vending Kiosks. The table below gives the details:

MEDIA	ROUTE	QUANTITY
Metro Train Panel	50 Trains on Line II, III, IV, V, VI & VII	2875 Panels
Metro Feeder Buses Wrap	35 Metro Feeder Buses	
DTC Buses Wrap	23 TC Buses	

9. The Eco Clubs issued instructions/ guidelines on Idol Immersion by emailing 2027 schools, 174 educational institutions/colleges, for being relayed at assemblies and gatherings, held Nukkad Nataks / Workshops /rallies/ creation of posters.

10. 300 banners and 10,000 posters were distributed to the offices of the Deputy Commissioners.
11. The DPCC directions under Section 5 of the E& F Act was uploaded on the DPCC website and drawn attention to.
12. An awareness Workshop was conducted for 175 Eco club teachers on 29.8.19.
13. Department of Environment had handouts printed regarding idol immersion.
The photos of the activities are on page 67 of the Compendium of Clean Yamuna Awareness Programmes uploaded on the YMC website under Key Communication.

Lessons Learnt:

- ✓ Registration of idol makers and materials to be used would need to issue well in advance and repeated in between.
- ✓ Water availability would need to be augmented by DJB as there was some dissatisfaction expressed at a few places.
- ✓ The drill for cleaning the ponds and quick removal of immersed idols will have to be done daily by DMCs to avoid accumulation.
- ✓ The public tendency to cut across districts would have to be overcome with better sensitization.
- ✓ Saraswati Puja is another big festival and though it is confined largely to the Bengali community, idol immersion does take place. This will need to be factored in next year.
- ✓ On the whole the media reported favorably on the fact that immersion in the river was avoided in 2019. Unfavourable reports were regarding water shortage at some places which can easily be rectified this year.

Conclusion

The experience of using artificial ponds for idol immersion has been a learning experience but once the Government agencies understood that the performance and outcomes were being measured a seriousness became visible. The success of the artificial pond strategy was due to overarching orders from NGT, constant monitoring but the response from the agencies cutting across all sectors – Divisional Commissioner for providing leadership, the DMCs for creating the pits, the DJB for making water available, the Environment Department and

DPCC for bringing out the Notification and arranging extensive publicity and the Education Department for enthusing the school children in particular –is a matter of satisfaction. That the River Yamuna was saved from annual pollution caused by plaster of Paris, synthetic colours, chemicals and plastic on account of the immersions in the river must give cause for relative contentment. It also raises the bar and should lead to even better management in 2020.

The public from outside Delhi were found coming into the city from neighboring districts to immerse their idols. This cannot be stopped but can be avoided if good facilities are created by the neighboring districts. Delhi's capacity if it is overrun by people using the district ponds could affect the river as the footfalls from outside cannot be anticipated. A specific direction from NGT to the other States to set up artificial ponds at a district level and to mount awareness campaigns would help.

Chapter -12

State of Haryana and Pollution of the Yamuna

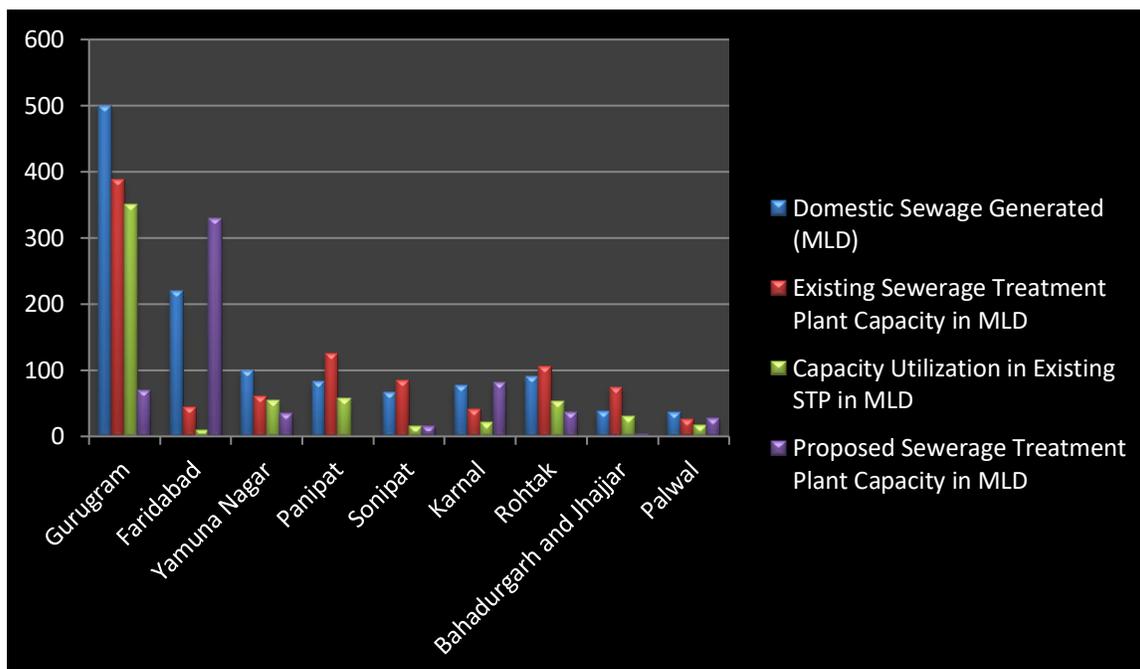
Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

The issues on which directions were given are summarized below:

- (i) Status of STP:*
- (ii) Status of Diversion of Sewage in approved areas:*
- (iii) Status of Diversion of sewage in unapproved areas:*
- (iv) Status of Sewage Treatment and laying of sewer line in Faridabad:*
- (v) Status of Sewage Treatment and laying of sewer line in Gurugram:*
- (vi) Status of Industrial Waste Water Pollution:*
- (vii) Compensation and accountability.*

A Review meeting was held with the Chief Secretary, Haryana and the Administrative Secretaries of the line departments responsible for compliance of the directions Hon'ble NGT dated 11.09.2019. The Yamuna Monitoring Committee attended a meeting in Haryana Bhawan on 10.1.20 chaired by the Chief Secretary Haryana. The YMC flagged the most important issues by focusing on the quantum of domestic and industrial waste generated, existing treatment capacity, capacity utilization and proposed construction of new STPs and CETPs in the major districts in the catchment area of River Yamuna and drew notice of the officers to the major gaps. The following charts portray the status of STPs, CETPs and the gaps that remain.

STATUS OF STP IN THE CATCHMENT AREA OF RIVER YAMUNA HARYANA

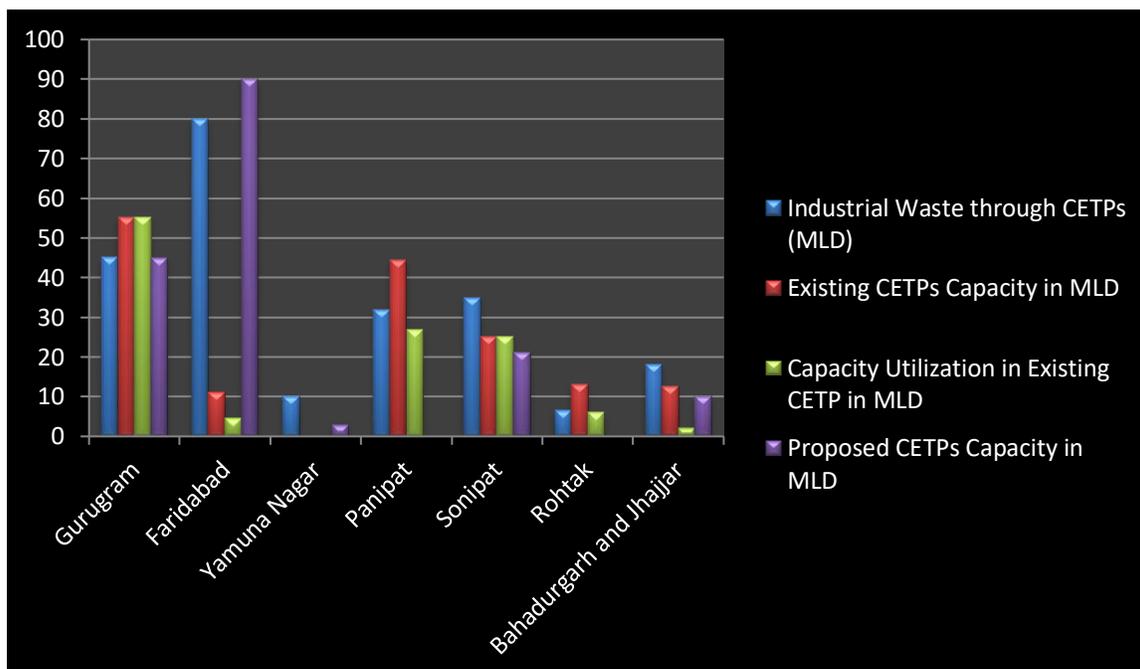


STATUS OF STP WITH THE TARGET DATE IN THE CATCHMENT AREA OF RIVER YAMUNA

Name of the District/Town	Domestic Sewage Generated (MLD)	Existing Sewerage Treatment Plant Capacity in MLD	Capacity Utilization in Existing STP in MLD	Proposed Sewerage Treatment Plant Capacity in MLD	Target date for compilation of Proposed STPs
Gurugram	500	388	350	70	31.12.2022
Faridabad	220	45	10	330.5	31.12.2022
Yamuna Nagar	99.21	60.5	54.2	35	30.06.2020
Panipat	83.35	125.8	58.3	0	-
Sonipat	67.06	85.3	15.54	15	31.12.2020
Karnal	77.43	40.5	21	82	31.12.2020
Rohtak	90.95	105.5	53	37	30.06.2021
Bahadurgarh and Jhajjar	38.08	74.5	29.7	3	31.12.2021
Palwal	36.89	25.5	17.57	27.5	31.12.2020

The charts above were run through with the Chief Secretary and all officers.

STATUS OF CETP IN THE CATCHMENT AREA OF RIVER YAMUNA HARYANA



STATUS OF CETP WITH THE TARGET DATE IN THE CATCHMENT AREA OF RIVER YAMUNA

Name of the District/Town	Industrial Waste through CETPs (MLD)	Existing CETPs Capacity in MLD	Capacity Utilization in Existing CETP in MLD	Proposed CETPs Capacity in MLD	Target date for compilation of Proposed CETPs
Gurugram	45.2	55.2	55.2	45	31.12.2021
Faridabad	80	11.1	4.5	90	31.12.2021
Yamuna Nagar	10	0	0	3	31.07.2021
Panipat	32	44.5	27	0	31.12.2020
Sonipat	35	25.2	25.2	21	30.04.2021
Rohtak	6.5	13	6	0	31.03.2020
Bahadurgarh and Jhajjar	18	12.5	2	10	31.10.2021

This chart was displayed during the meeting and the gaps drawn attention to.

The Chief Secretary Haryana directed the Administrative Secretary of Public Health Engineering Department (PHED), Urban Local Bodies Department (ULB), Haryana Shehri Vikas

Pradhikaran (HSVP), Gurugram Metropolitan Development Authority (GMDA), Haryana State Industrial Infrastructure Development Corporation (HSIIDC) and Haryana State Pollution Control Board (HSPCB) to submit the compliance report to Hon'ble NGT before 15.01.2020 through Additional Chief Secretary of Environment and Climate Change Department. The minutes of meeting dated 10.01.2020 is annexed at **Annexure C-12/1**.

The affidavit in compliance of NGT's Order dated 11.09.2019 was filed on 15.01.2020.

The observations of the Haryana Yamuna Monitoring Committee (HYMC) on the affidavit submitted by the State of Haryana.

The detailed Action Plan for treating domestic and industrial effluent from the townships of Faridabad, Gurugram, Sonipat, Panipat and Yamuna Nagar as had been directed by the Chief Secretary Haryana in the meeting dated 10.01.2020 do not find place in the status report. The status report also does not reflect compliance the Orders of Hon'ble NGT dated 11.09.2019. The information provided in the affidavit is inconclusive and based upon some reports received from the line departments only.

The observations of HYMC on the status report indicating the point wise compliances made by the line departments are given below:-

i) Status of Sewage Treatment Plant

- a) Additional Chief Secretary, PHED has been appointed as Single Supervisory Authority for monitoring, implementing and coordinating with the line departments for construction and operation of STPs and CETPs.
- b) Out of 62 Existing STPs, operational deficiencies have been rectified in 48 STPs as informed by HYMC (**PHED in 35 STPs, GMDA in 5 STPs, HSVP in 4 STPs and ULB in 4 STPs**). In addition, 05 Nos. of New STPs have been recently constructed. The HSPCB has engaged a NABL accredited Laboratory for collecting the sample of effluent generated from these 53 STPs in the presence of Members of HYMC and shall submit detailed analysis report to confirm if the prescribed standards for each STP are being complied with. The Terms of reference issued by HSPCB to the laboratory are annexed at **Annexure C-12/2**.

- c) Report regarding fixing accountability of the responsible senior officer for each STP is not submitted in the affidavit.
- d) Standard operating procedure for each STPs and CETPs has been formulated by the line department except ULB and HSVP Department. However what is required is to ensure that the SOPs are actually followed.
- e) All the line departments except ULB and HSVP had engaged reputed independent agencies to assess the efficacy of all the STPs to rectify the design and operational deficiencies. The reports from these institutes are not part of the affidavit. However, the HYMC received the report of IIT Roorkee from GMDA and Jamia Milia Islamia University from PHED.
- f) PHED is the only Department which had earlier submitted the month wise execution plan to HYMC in compliance to the Order of Hon'ble NGT dated 11.09.2019 for construction and up-gradation of STPs. Now, the month wise execution plan from the rest of the departments forms a part of the present affidavit.
- g) 07 STPs (02 Under Construction and 05 proposed to be constructed as per affidavit) will not be completed by 31.12.2020. The GMDA and ULBs are responsible for delay in construction of 02 STPs and 05 STPs respectively. Details are annexed at **Annexure C-12/3**.

ii) Status of Diversion of Sewage in the approved areas

- Out of 1516 KM of sewer line proposed to be laid for diversion of sewage, 832 KM of sewer line has already been laid and rest will be completed by 31.12.2020. The HYMC is opinion that the target date for laying of sewer line is achievable except in Beri, Panipat Town and Faridabad Town.
- Beri Town - The PHED has failed to acquire land for Main Pumping Station and Intermediate Pumping Station, consequently delay in laying of sewer line in Beri Town.
- Panipat Town – The ULB Department has not yet accorded Administrative and Financial approval for laying of 180 KM sewer line in newly approved residential areas. The schedule of ongoing works of laying of sewer line is also exceeding the target date of 31.12.2020.

- Faridabad Town –The ULB Department has failed to accord Administrative and Financial approval for laying of sewer line in approved residential areas.
PHED and ULB Department are responsible for the delay in execution of diversion of sewer in Beri, Panipat and Faridabad town.

iii) Status of Diversion of Sewage in the unapproved area

Out of 84.14 MLD estimated sewage generation from unapproved areas 28.6 MLD has been diverted to the STPs. The work of diversion of sewage in Panipat Town will not be completed until 31.12.2020 as indicated in the affidavit. HYMC is of the opinion work of diversion of sewage in Yamuna Nagar Town will also not be completed by 31.12.2020. The field report indicating that the quantum of sewage required to be diverted from unapproved areas of Yamuna Nagar is 39 MLD instead of 15 MLD given in the affidavit. The discharge from unapproved area of Faridabad and Panipat are not considered in the total sewage generated from unapproved areas. The ULB Department is responsible for the delay in Yamuna Nagar, Faridabad and Panipat.

iv) Status of Sewage Treatment and laying of sewer line in Faridabad.

- a, b) The ULB Department has failed to submit comprehensive date bound Action Plan for treatment and diversion of sewerage from approved and unapproved areas within 02 months from the date of Order of Hon'ble NGT dated 11.09.2019. The existing 03 STPs are abandoned and 01 STP is non-functional. Untreated effluent is being discharged into River Yamuna.
- c) The administrative and financial sanction from Principal Secretary ULB and Chief Administrator HSVP for treatment and diversion of sewer from approved and unapproved areas of Faridabad Town have not been incorporated in the affidavit.
- d) The line departments have not submitted month wise execution plan for laying of sewer to divert the sewage to the STP.
HYMC is the opinion that the ULB and HSVP Department are responsible for the delay.

v) Status of Sewage Treatment and laying of sewer line in Gurugram

a) The GMDA has submitted Action Plan to stop the discharge of untreated effluent into Storm Water Drain, Leg-I, Leg-II and Leg-III (Badshapur Drain) with a target date of 31.12.2020. Till then these Storm Water Drains will carry 75 MLD of untreated/partially treated effluent. There is no significant reduction of discharge noticed in these 3 Storm Water Drains. The HYMC is the opinion that the target date for diversion of sewerage may not be achieved without expeditious action and strict enforcement by officers of GMDA and the Municipal Corporation Gurugram.

b) GMDA has not submitted detailed Action Plan for construction of 20 MLD STP at Jhajgarh and 50 MLD STP at Dhanwapur.

The affidavit indicating that there is no gap between the quantum of sewage generated and the available sewage treatment capacity in Gurugram considering existing 30 MLD treatment capacity of Stand Alone STPs installed by the colonizers is not credible. Further, GMDA has included 57 MLD untreated effluent discharge through Storm Water Drains, instead of the actual 75 MLD which was in the Action Plan.

c) The Storm Water Drain, Leg-I, Leg-II and Leg-III (Badshapur Drain) are still carrying 75 MLD of untreated effluent as submitted in the affidavit.

Gurugram being a Metropolitan City discharging effluent through Najafgarh Drain, the following are the observations of HYMC for effective waste water management of the City.

- There is no verifiable data available regarding area wise waste water generation in Gurugram. In the absence of such information it is not possible for gap assessment between waste water generation and disposal after treatment to be made.
- **GMDA may be directed to undertake area wise critical assessment of waste water generation and disposal after treatment.**
- The Gap between existing treatment capacity (418 MLD) and waste water generation (408 MLD) is only 10 MLD. This is not desirable for such a large township considering floating population, seasonal variation in water consumption and mixing of surface run off with sewage in rainy days.

- The addition of capacity of Stand Alone STPs (30 MLD) with existing treatment capacity of the town cannot be accepted in the absence of proper quantification of each stand alone STP and its point of disposal.

vi) Status of Industrial Waste Water Pollution

i. Status of CETP

- a) Chief Secretary Haryana has directed to HSVP, GMDA and HSIIDC to complete the ongoing works for upgradation and construction work of all CETPs in shortest possible time but the HYMC is the opinion that they might not adhere to the timeline as per the Order of Hon'ble NGT dated 11.09.2019 .
- b) The Managing Director of HSIIDC submitted that they have taken some short terms measures in all 09 existing CETPs and IIT Delhi assigned for carrying out the efficacy study of all the existing CETPs. The report of IIT Delhi is still awaited and it was not a part of affidavit. The HYMC is not in position to ascertain the compliance status of these CETPs as neither Action Plan submitted nor any modification work undertaken on the basis of influent characteristics.
- c) The Chief Administrator HSVP submitted that they have started the process of upgrading the existing 21 MLD old CETP at Panipat as per the report submitted by M/S Northern India Textile Research Association (NITRA) and the work for modification shall be completed by 31.12.2020. The second newly constructed CETP of 21 MLD capacity at Panipat is said to be compliant but HYMC has reason to believe that the required discharge is not reaching the CETP from the textile cluster at Sector 29 Part II Panipat. There is need to clinch this through independent inspection which will be arranged by HYMC.

The GMDA has taken some corrective measures on the basis of efficacy study conducted by IIT Roorkee. The HYMC will check the compliance status of the CETP.

ii. Status of Stand Alone ETPs

HSPCB is regularly monitoring Stand Alone ETPs. Environmental Compensation of Rs. 22514813/- has been imposed on 21 Nos. of non complying units and collected Rs. 7547500/- as environmental compensation.

The HYMC is of the opinion the direction needs to be issued to the Chairman, HSPCB to quarterly monitor the compliance status of Stand Alone ETPs of Industries directly or indirectly discharging their effluent into the River Yamuna. Environmental Compensation must be imposed against the violating units besides taking closure actions under Section 33A of Water (Prevention and Control of Pollution) Act, 1974.

iii. **Septage Management Policy**

19 ULBs out of 33 towns in the catchment area of River Yamuna have notified their Septage management policy. Rest of the 14 ULBs are yet to notify the same.

iv. **Diversion and reutilization of Domestic Sewage generated from villages.**

There are 277 villages in the catchment area of River Yamuna. Action Plan for diversion, treatment and reutilization of domestic sewage has been prepared and submitted by Development and Panchayat Department of Haryana. The work of diversion and treatment in 21 villages out of 277 villages has been completed. Month wise action plan submitted by the department and the target date for completion of diversion, treatment and reutilization of domestic sewage by 31.12.2020 appears to be achievable.

v. **Status of Online Monitoring Devices (OLMS) in Industries, STPs and CETPs.**

- a) Haryana State Pollution Control Board submitted details of OLMS installed in the STPs and CETPs in the catchment area of River Yamuna. The HYMC has serious reservations about the operational efficiencies of these devices. These devices are neither being cleaned nor being calibrated regularly. Haryana State Pollution Control Board does not have any mechanism to verify the authenticity of the data generated from these OLMSs. Further, no mechanism with the regulatory authority (HSPCB) to take cognizance of any reported violation of prescribed standards from these OLMS. The HYMC observed during the field visit of STPs and CETPs where the OLMS are installed and connected to the HSPCB server are not giving actual data. In the absence of strong monitoring mechanism in place the purpose of installation of OLMS is defeated. HSPCB and the

concerned line departments may be directed to take corrective measures so that the validated data generated from these OLMS could be placed in public domain.

A direction that in case the OLMS reports are > than 10% variation from manual testing reports the OLMS service provider may be held responsible and black listed may be considered.

- b) Details of steps taken to strengthen the HSPCB are not mentioned in the affidavit. However, it is learnt that the State Government has increased the number of Regional Offices and the process for strengthening the Board is in progress.

Unless there is a plan with specific date provided it may not get the priority as the situation demands.

vi) **Compensation and accountability**

The Government of Haryana has not submitted any progress regarding Bioremediation and/or phytoremediation or any other remediation measures taken in any of the drains carrying effluent to River Yamuna with effect from 01.01.2020.

Domestic Effluent Treatment (Sewage Treatment Plant)

a) **Public Health Engineering Department (PHED)**

Communication received from the PHED vide Memo No. 11353-PHE/Urban dated 24.01.2020 has informed that the reports on performance evaluation and technical audit of STPs (44 Nos.) has been received from Dr. Abid Ali Khan, Assistant Professor, Department of Civil Engineering Jamia Milia Islamia on 20.01.2020. Short term action to rectify the deficiencies indicated by HYMC and Dr. Abid Ali Khan in 41 existing STPs has been taken up. Out of these 41 STPs, 06 STPs are under stabilization. The department will prepare a long term Action Plan after studying the performance evaluation and technical audit report.

b) **Urban Local Bodies Department (ULB)**

Performance evaluation and technical audit was not carried out in 09 Existing STPs. 02 STPs are under replacement.

c) Haryana Shehri Vikas Pradhikaran Department (HSVP)

Performance evaluation and technical audit was not carried out in 5 Existing STPs. 02 STPs are reported to be complying.

d) Gurugram Metropolitan Development Authority (GMDA)

Performance evaluation and technical audit has been carried out in 5 Existing STPs. The work of rectification of deficiencies indicated in the performance evaluation report of IIT Roorkee is under progress.

The compliance status of all these STPs including 09 not complying STPs as mentioned in the affidavit will be ascertained after inspection and by HYMC. The environmental compensation shall be imposed in compliance with the Order of Hon'ble NGT dated 11.09.2019 if the STPs found not complying.

Industrial Effluent Treatment (Common Effluent Treatment Plant)

a) Haryana State Industrial Infrastructure Development Corporation (HSIIDC)

Performance evaluation and technical audit carried out by IIT Delhi of all existing CETPs. Report is still awaited. Upgradation, modification and construction of new CETP if required will be carried out after receiving the performance evaluation report. HSIIDC has proposed to construct 10 new CETPs (3 CETPs at Yamuna nagar, 3 CETPs at Faridabad, 3 CETPS at Gurugram and 1 CETP at Bahadurgarh) by 31.12.2021. The details are attached at **Annexure – C-12/4**.

b) Haryana Shehri Vikas Pradhikaran Department (HSVP)

The HSVP Department obtained performance evaluation report from Northern India Textile Research Association (NITRA) for old 21 MLD CETP at Panipat. The work of modification will be completed by 31.12.2020. The industrial effluent is not reaching the new CETP of 21 MLD at Panipat.

c) Gurugram Metropolitan Development Authority (GMDA)

Performance evaluation and technical audit was carried out by Jamia Milia Islamia University for 02 Nos. of CETPs (30 MLD and 25 MLD). The rectification work has been completed.

The compliance status of all STPs and CETPs will be ascertained after inspection and receipt of results from the designated laboratory appointed by Haryana Government to undertake independent analysis. The laboratory was designated on 24.1.20 and the analysis of samples has yet to start. The question of levying environmental compensation as directed by NGT in its order dated 11.9.19 will be addressed as soon as the laboratory reports start being generated.

Advice of the Haryana Monitoring Committee

The HYMC is the opinion that directions may be issued to the Additional Chief Secretary of PHED, ULB, Managing Director of HSIIDC, Chief Administrator of HSVP and Chief Executive Officer of GMDA through the Chief Secretary Haryana to expedite the following issues falling which Environmental Compensation shall be imposed on them.

- Treatment of 300 MLD domestic and industrial effluent from Faridabad Town.
- Diversion of domestic, industrial effluent to Existing STPs and CETPs in Panipat Town.
- Replacement of Trunk Sewer carrying discharge to the 2 Existing STPs of Sonipat Town.
- Modification/capacity augmentation of 04 CETPs in Industrial Estates of Sonipat Town.
- Plan for treatment of Industrial and Domestic Effluent from small illegal Utensils Manufacturing Units in non-conforming industrial area of Yamuna Nagar Jagadhri Town.
- Treatment of Industrial and Domestic Effluent from industries operating in the non-conforming area of Panipat, Sonipat (Kundli), Faridabad and Gurugram.
- Bioremediation and/or Phytoremediation in all 11 Drains leading to River Yamuna should be initiated immediately to avoid Environmental Compensation.
- GMDA to expeditiously complete the following work :
 - a) Critically assess the quantum of waste water generated from Gurugram Town to plan the desired treatment capacity instead of submitting different reports each time.
 - b) Reuse of treated effluent for Irrigation and Horticulture purposes.
 - c) Consider the scope for Phytoremediation of treated effluent from Gurugram in the catchment area of Najafgarh Lake. A team of officers from Central Pollution Control Board (CPCB), HSPCB, GMDA and the Members of River Yamuna Monitoring Committee

along with Dr. C.R. Babu, Emeritus Professor, Delhi University visited the Najafgarh Drain and Lake on 25.01.2020 to assess the possibility of treating sewage from Gurugram Town through Phytoremediation. A Report will be submitted by Dr. C. R. Babu directly to Hon'ble NGT.

The Najafgarh jheel has been an important seasonal wetland of the Yamuna-Sahibi basin which acts as a natural floodwater regulating and groundwater recharging area due to its unique topography. It is a shallow wetland in the low-lying areas on the borders of Gurgaon district of Haryana and the National Capital Territory of Delhi between the 208m and 211m contour lines above mean sea level. The catchment area of Najafgarh Jheel includes land of Ghummanhera, Shikarpur and Jhatikra villages in NCT Delhi, Budhera, Dhankot, KherkiMajra and Daulatabad villages of Haryana together forming the largest seasonal wetland of this region. The Jheel swells in area during the monsoon due to rainwater runoff from a large catchment of Gurugram Town through Badshapur Drain (Leg-III), the Sahibi River. The area falling within the 209m contour is approximately 917 acres. The core area of Najafgarh jheel which remains submerged during most part of the year could be classified as a Nature Conservation Zone (NCZ) as per the guidelines of the NCRPB. In addition to this, the area could be declared as a 'No Construction Zone' under the relevant Statutes and should be maintained as such. Only Agriculture, Forestry, Pisciculture and Horticulture should be allowed within this zone. The Najafgarh Jheel is a feeding and nesting site of Migratory Birds. The domestic effluent discharge and surface runoff from Gurugram city is now significantly contributing to the water flow to the Najafgarh jheel.

The HYMC is of the opinion that the Najafgarh Jheel and its catchment area can be effectively utilized for Phytoremediation of effluent, surface runoff discharged from Gurugram. This will help in reducing pollution load in River Yamuna through Najafgarh Drain.

- Direction may be issued to Government of Haryana to explore the possibility for notifying the core area of Najafgarh Jheel as Nature Conservation Zone and to implement the Phytoremediation of domestic effluent discharge and surface runoff

from Gurugram city. Phytoremediation in the remaining 10Drains discharging into River Yamuna needs to be taken up expeditiously as directed by Hon'ble NGT in its Order dated 11.09.2019.

- Direction may be issued to re -plan the execution of works which are scheduled to be completed beyond 31.12.2020 so that no untreated effluent reaches River Yamuna after 31.12.2020.
- Direction may be issued to all the line departments to remove the operational and structural deficiencies of all STPs and CETPs as indicated in performance evaluation and technical audit reports submitted by third party agencies
- Direction may be issued to implement the Standard Operational Procedure for operation and maintenance of STPs and CETPs and to have oversight of the compliance of the check lists which should be signed by the unit in-charge.

Chapter 13

State of Uttar Pradesh and Pollution of the Yamuna

Directions of the Hon'ble National Green Tribunal (NGT) dated 11.9.19

(i) Sewage Management. (In respect of Uttar Pradesh)

- a) The Principal Secretaries, Environment and Forest and Urban Developments are required to prepare short and long term plans to control flow of sewage from UP into the river Yamuna at Ghaziabad with time lines for execution. U.P. Chief Secretary to monitor it.*
- b) Chief Secretary U.P to ensure that clarity in terms of execution of time lines are given and action taken on ground with regard to interception and diversion of Banthala and Indira Canal drains.*
- c) Chief Secretary, U.P to review the matter with regard to sewerage area, un-sewered areas and leakages in the sewer networks etc. and fix timelines for execution of same.*
- d) Chief Secretary U.P to review the matter with regard to upgradation of STPs which are not meeting the norms and ensure coordination amongst departments.*

(ii) Industrial Pollution:

- a) State PCB to evolve a mechanism to recover the EC from those refusing to pay.*
- b) Complete inventory of industries both in conforming and non- conforming areas be prepared by State PCB within one month*
- c) Report be submitted on performance of CETPs and ETPs of industries by UPSIDC and PCB.*

(iii) Demarcation, Protection and Rejuvenation of Floodplains

The floodplain should be demarcated and developed through wetlands and biodiversity parks. Vice Chairman DDA and Principal Secretary, Irrigation, U.P to give specific timelines for setting up of same. The Chief Secretary UP shall supervise and monitor the same.

(iv) Compensation and Accountability: *Directions on the subject in respect of NCT Delhi and Haryana will apply to the State of Uttar Pradesh also. Bioremediation and/or phytoremediation or any other remediation measures may start as an interim measure positively from 01.01.2020,*

failing which the State of Uttar Pradesh may be liable to pay compensation of Rs. 5 Lakhs per month per drain to be deposited with the CPCB. This however, is not to be taken as an excuse to delay the installation of STPs, sewerage network and its connectivity. For delay of the work, the Chief Secretary, State of Uttar Pradesh must identify the officers responsible and assign specific accountability. Wherever there are violations, adverse entries in the ACRs must be made in respect of such identified officers for delay in setting up of STPs, sewerage network and its connectivity by the concerned head of the department.

i). The State of Uttar Pradesh will be liable to pay Environment Compensation if defaults take place as under:

a). The operational deficiencies of the existing STPs must be rectified within three months failing which Environmental compensation of Rs. 5 Lacs per month for STP shall be deposited with CPCB.

b). With regard to works under construction, after 01.07.2020, direction for payment of environmental compensation of Rs. 10 lakhs per month to CPCB for discharging untreated sewage in any drain connected to river Yamuna and Rs. 10 lakhs per month to CPCB per incomplete STP, sewerage network and its connectivity will apply.

c). With regard to the situation where works with regard to STP, sewerage network and its connectivity have not yet started, the State of Uttar Pradesh has to pay an Environmental Compensation at the rate of Rs. 10 lakhs per month per STP, Sewerage network and its connectivity after 31.12.2020 for the delay in setting up of the same. It will be open to State of Uttar Pradesh to recover the said amount from erring officers/contractors.

d). The State of UP is not shown to have to furnished performance guarantee in terms of order dated 29.01.2019. The same may now be furnished with additional sum of Rs. 1 crore for the delay within one month failing which coercive method have to be adopted for enforcement of the order.

e). The State of UP may cooperate and coordinate with the committee constituted by this Tribunal in absence of any satisfactory mechanism constituted by the State.

16. The Monitoring Committee may continue to monitor compliance of directions of this Tribunal and furnish its next status report as on 31.12.2019 by 31.01.2020 with comments on the affidavits of the concerned authorities. The same may also be uploaded on its website. We further direct the NCT Delhi, the States of Haryana and UP, DDA to file affidavits of compliance of the directions of this Tribunal as on 31.12.2019 before the Committee as well as this Tribunal on or before 15.01.2020. The registry may upload them on website as soon as received so that all concerned can access the same before the hearing to avoid the situation which arose on 12.7.2019 as noted in para 7 above.

YMC Report

The YMC has relentlessly pursued the implementation of the NGT order with State Government through letters addressed to Chief Secretary and the Principal Secretaries over the last 1-1/2 years. In particular, during the last three months, the directions contained in NGT orders dated 11.9.19 became the focus. YMC wrote series of letters to the Chief Secretary, UP on 28.10.19, 7.11.19, 28.11.19 and 12.12.19 requesting for one time presence of Principal Secretaries of Concerned Departments in time meeting convened by YMC as the earlier meetings held with the Engineers and other officers of relatively junior levels had not yielded any definite commitment on the action proposed by the state government and the timelines for stoppage of flow of sewage and industrial reaching river Yamuna through drains originating or passing through UP. The review meeting with Principal Secretaries finally took place on 30.12.19. The Principal Secretary (UD), Principal Secretary (E&F), GM, Jalkal Nagar Nigam, CE, UP Jal Nigam, Chief Engineer (Irrigation), UP, Executive Director, UPSIDA and Municipal Commissioner, Ghaziabad among others were present all for the first time in 15 months. Copy of the Minutes of the meeting are placed at **Annexure-C-13/1**

River Yamuna receives sewage mainly from cities of Sahibabad, Loni and Indrapuri drains which meet Shahdara drain before it joins the River Yamuna. The CPCB in its report dated 27.12.19 submitted to the YMC has informed that the cities of Sahibabad and Loni Generate 575 MLD of sewage for which there are seven(7) STPs of a total capacity of 427 MLD. However out of these, only 2 STPs are functioning properly treating 80 MLD to the prescribed standards. Consequently there is large quantity of sewage flowing through the Sahibabad and

Indrapuri drains. In addition, Noida drain, which originates in Delhi and thereafter flows through Noida before joining river Yamuna discharges 354 MLD of sewage into river Yamuna. The details of flow and pollution load are as given in the statement below:

S.no.	Name of the drain	Discharge	BOD mg/L	COD mg/L	TSS mg/m
1	Sahibabad Drain	40 MLD	744	1615	1189
2	Indrapuri Drain	31 MLD	743	1463	647
3	Noida	354	46	163	83

The Principal Secretary UD of Uttar Pradesh informed YMC that the State Government has prepared action plan to comprehensively control the flow of sewage in the drains joining Shahdara drain and stop all the sewage flowing through the Sahibabad and Indrapuri drains.. This is being done by engaging concessionaires for each city for complete management and maintenance of the sewer network and STPs which includes undertaking maintenance and up-gradation wherever required. For the city of Ghaziabad the concessionaire, namely, M/s VA Tech Wabag, Chennai has since been engaged with effect from 16.12.19. Once this new policy of “one city one operator” becomes fully functional, the sewer network as well as STPs will be run efficiently and result in better capacity utilization. Under the new agreement, the payment to the concessionaires is linked not only to the quantum of sewage treated at the plant but also adherence to the quality standards.

On the stoppage of sewage flowing through the Sahibabad, Indrapuri and Banthala drains from sewerred areas, the YMC was informed that by June 2020 all the sewage flowing from sewerred areas will be plugged ensuring that there is no sewage entering Shahdara drain through the Sahibabad drain. Banthala drain does not meet Sahibabad drain. A STP of 60 MLD capacity is also proposed to be set up for treating sewage in Indrapuri and Banthala drains and proposal seeking financial assistance from NMCG has also been sent to Govt of India. The State Government has also formulated Septage Management Policy in October 2019 which seeks to cover all the unsewerred areas. The septage management projects presently under implementation are expected to be completed by November 2020.

On phytoremediation/bioremediation, the YMC was informed that the State Government has submitted a DPR for bioremediation in 459 drains using NEERI technology to the NMCG for approval. The State Government has also agreed to contribute 50% of the budgetary requirement towards this scheme out of its own financial resources. A copy of the compliance report submitted by the Principal Secretary (UD) is placed at **Annexure C -13/2**.

Industrial Pollution

Pursuant to the directions of the Tribunal, UPPCB has imposed environmental compensation (EC) of Rs. 2.03 Crores out of which only 63.98 lacs has been realised. The realization being poor, the UP PCB in compliance of NGT orders has also evolved a policy under which the “consent to operate” for the defaulting unit is not being renewed until the EC has been paid. Besides, EC if not paid is purposed to be recovered as arrears of land revenue. The YMC will monitor progress on this.

Industries in Non-Conforming areas

As regards inventory of industries in conforming and non-conforming areas a joint team of the district administration, electricity departments, land owning agency and UPPCB has been undertaking a survey of industries in residential/non-conforming areas. In Loni and Shahdara in all 295 industries in Loni and 36 industries in Sahibabad have been closed since August 2019.

Industries in Conforming areas

A total of 97 industries were identified not complying with Air/Water Acts. All these industries were closed and sealed. The details of the action taken by PCB are placed at **Annexure C-13/3**.

Flood Plain Rejuvenation

167 Hectare flood plain of river Yamuna falling within UP is proposed to be rejuvenated by creating wetlands and biodiversity parks through DDA and funds for this purpose has been agreed to be provided by the state of UP. in the meeting held on 30.12.19, the Engineer in Chief UP Irrigation Department informed the YMC that the Finance department has since concurred in the payment of Rs. 35 Crores to DDA for flood plain rejuvenation as a deposit work on the lines of 10 projects that are being implemented by DDA on flood plains under its control.

The DDA has on its part already completed the tendering process and once funds are received from the state of UP, the implementation of flood plain rejuvenation activities as per the project prepared by DDA can commence on the ground.

YMC will monitor this.

Chapter – 14

Creating Public Awareness Through Information Dissemination Strategies

Directions of the Hon'ble National Green Tribunal (NGT) dated 25.7.18 and 26.17.18

“We direct all public authorities, Municipal Corporations and concerned Departments ---- to take effective steps to educate all sections of society to co-operate and not to do any acts or deeds which are prohibited under this judgment and would have adverse consequences. These authorities should place large sized dustbins---and make concerted efforts both by the ones who are governing and ones who are governed. They shall issue circulars, display signages, and may take recourse to Print and Electronic media for educating people at large.”

The Committee may also involve educational institutions for expectations, awareness and feedback about the results.

Report of YMC

The Clean Yamuna Awareness Program has been pursued by the YMC on two planks:

- I. With The Education Department involving School Children
 - II. Building general Awareness about need to keep the Yamuna Pollution Free
- I. Education Department involving School Children

After first meeting the Deputy Chief Minister in charge of the Education Portfolio in GNCT, the YMC held 6 meetings from February 2019 to January 2020 with the Secretary Education, the Director of Education and officers of the School Council for Educational Research and Training (SCERT) which was given nodal charge of school dissemination programmes on the Yamuna River. The Action Plan of the Department was included in the second interim report of the Committee dated 27.5.18.

An Action plan for cleanliness of river Yamuna was submitted by Education Department placed as **Annexure-C-14/1**. The Action Plan has been implemented substantially and is summarized in the table below which indicates the activities undertaken, the number of schools and students which participated and this was done exclusively for the Yamuna. The

- ✓ YMC arranged a meeting with MCD Directors of Education who were reportedly not coming for meetings so that SCERT could train the Eco Club in-charges of the MCD Schools on the need for cleaning the Yamuna.
- ✓ The YMC had asked that Private schools (which have almost equal number of students as the Government schools) be also covered and that is being done according to the official report given to YMC in January 2020.

SUMMARY REPORT : ACTION PLAN FOR CLEANLINESS OF RIVER YAMUNA							
Directorate of Education							
S. No.	Name of Activity	Place	Date	Number of Schools who participated in the Activity	Number of Participants		
					Students participated	Teachers involved	HoS
1	Painting Competition	Bank of River Yamuna	12.02.2019	415	800	415	415
2	Demonstration regarding Drainage and Industrial Waste	School Premises, Nearby Locality of School, Thyagraj Stadium, Yamuna River	From July to December, 2019	902	365719	16280	872
3	Pledge taking	School Premises, Nearby Locality of School	Mostly in the month of August to December	1026	10,39,735	66775	1003
4	Tree Plantation Drive	School Premises, Nearby Locality of School	August , September , October 2019	1026	238724	11330	1006

5	Reduce, Reuse and Recycle of Waste Materials	School Premises	Mostly in the month of July to September	1026	456740	20023	1010
6	Eco Friendly Idols Making	School Premises	Mostly in the month of July & August	906	232042	6247	868
7	Slogan Writing and Poster Making Competitions	School Premises and zones/district premises	Mostly in the month of July to September	1026	295868	6837	984
8	NukkadNatak and Rallies	School Premises and outside location nearer to school	July to November	1005	145101	17215	980
9	Role Plays	School Premises	August to December 2019	948	129262	4348	919
10	Say No to Plastic	School Premises	October 2019	1026	500829	28842	1045
11	Visit to Biodiversity Parks	Yamuna Biodiversity Parks	October to December 2019	721	169315	5767	678
12	Painting and Drawing Competitions	School Premises	July to November 2019	1026	324535	20270	1005
13	Orientation Programme organized by SCERT Delhi	Thyagraj Stadium, Delhi	07.06.2019	1026	2439 HoSs, Eco-Club Incharge, Programme Officers, NSS Incharge of all Govt. Schools and Officers of Directorate of Education participated.		

14	The video of Greta Thunberg full speech at UN Climate change COP24 Conference (available at https://youtube.com/watch?v=oCVQdr9QFwy) was shown to the students in the schools. COP 24 Conference Speech (panel Discussion)	School Premises	September to December 2019	908	312160	16821	875
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S. No.	Name of Activity	Place	Date	Number of Schools who participated in the Activity	Number of Participants		
					Students participated	Parents who were sensitised on the day of PTM / Annual Day	Parents who were sensitised on subsequent days
1	Mega PTM held on 19.10.2019	School Premises	19-10-2019	1026	738456	662960	338480
2	Mega PTM held on 04.01.2020	School Premises	04-01-2020	1026	605806	506090	262493
3	Annual Day	School Premises	October, November & December 2019	1026	926655	340397	209329

II. Building General Awareness about need to keep the Yamuna Pollution Free

The YMC held meetings on 28.10.19 and on 24.12.18 on plans and timelines for awareness related activities. The minutes are **Annexures – C-14/2 and C-14/3**. The YMC issued several directions based on the discussions held and the agreements arrived at when the

Principal Secretary Environment and Secretary Education were both present. The focus apart from schools was also on populations of unsewered areas, farmers who were growing food crops and vegetables on the Yamuna Flood plains, awareness about the severe health hazards from non-conforming colonies who were doing dyeing, electroplating, chromium plating, pickling in residential areas and how this impacts all citizens and the river and on building consciousness about pollution in the River Yamuna, its causes and what needs to be done by citizens to stop pollution in the river. The month wise plan of action has been provided and is at **Annexure – C-14/1**. Although the Plan is comprehensive the Department has been asked to spell out monthly deliverables in terms of number of events/ insertions so there is quantification of strategies like the use of radio, hoardings and newspaper advertisements.

In particular the minutes dated 31.12.19 at **Annexure – C-14/5** had asked the Environment Secretary to spell out. The number of workshops proposed to be held from January to December 2020. No indication has been given of how the public of 1897 unauthorised colonies with a population of more than 6 million people would be covered, the venues where such households would be educated and what is proposed to be told to the representatives/ mohalla heads of such unauthorised colonies, considering that their options are limited in terms of reducing pollution (having poor systems for drainage/ sewerage and garbage removal. A month to month programme was asked to be made available indicating groups of colonies to be covered and the residents being targeted. Since most dwelling units must have been rented and the occupants would be at work most of the day the awareness building efforts have to be specific to have any impact. The Environment Department has skirted these issues which were discussed and minuted.

The YMC has a compendium got prepared covering both the general and Awareness activities. The Education Department's activities at one place. A copy of the compendium is available on YMC Website under Key Communication. (5hard copies are being sent to Hon'ble NGT along with the report). The compendium gives a graphic picture of the activities undertaken by the Eco-clubs, *NukkadNataksusing* NGOs, issue of advertisements in the National dailies, building awareness in Industrial areas and among farmers. Two hard copies are

being sent. Although it shows impressive progress much more needs to be done to plan for and educate people who need such campaigns the most.

Conclusion

There has been a spurt of activity supported and spearheaded by the Education and Environment Departments and the level of consciousness in the public which has the largest interface with the river and facets of pollution has grown. However the activities are in their very nature sustainable only if there is individual interest, leadership and continuity. These activities need to become integral parts of the awareness building activities of both Departments as they can easily lose steam without pressure from those in charge.

1. The NGT is requested to direct the Department of Education to repeat the Action Plan vigorously and plan from now for its continuation. The Department must maintain data which can be reviewed and evaluated during the year 2020 by an independent body. The Education Secretary may be directed to give the evaluation as a project to any competent agency like the National University for Education Planning & Administration (NUEPA) or go by their advice on the engagement of a competent agency to do the evaluation of the impact of the awareness programmes.
2. The awareness building programmes necessarily need to include Municipal and private schools as all children can influence their families and eventually society. A direction to invariably include all schools in Delhi may be given which the YMC will pursue and monitor.
3. On general awareness building whereas the Environment Department has given a month to month Action plan it has no data on number of events./ advertisements/ hoardings/ Exhibitions/workshops/ radio jingles/competitions/*nukkadnataks*, special workshops for unauthorised colonies/audio visuals/ Messages from the Chief Minister and Farmer's Workshops that are planned. The numbers and periodicity are needed and YMC has asked for this repeatedly but has not been provided. Breaking it into measurable targets is important as otherwise such programmes lose steam and get dropped/ postponed.

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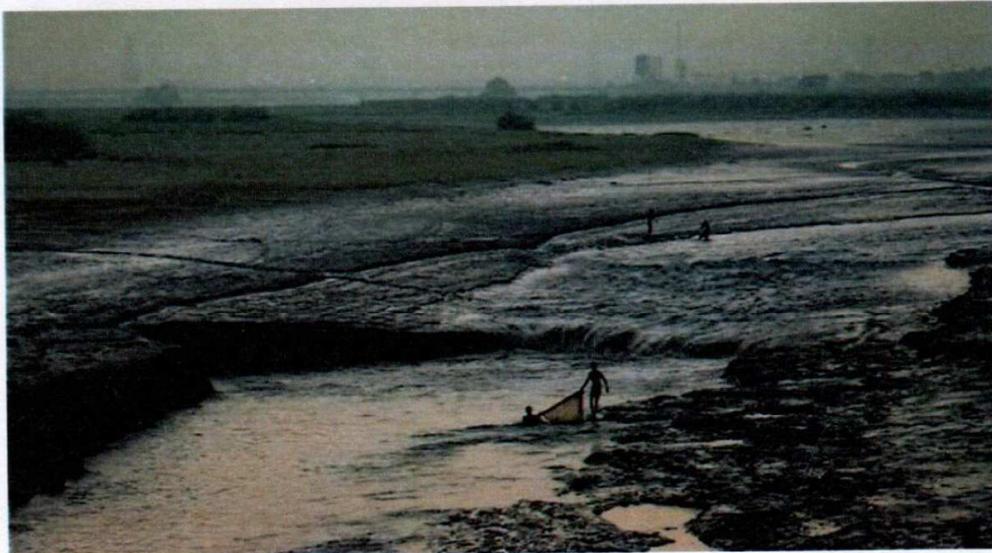
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Related to Chapter I - Environmental Flow



**COMMENTS ON REPORT ON STUDY & ANALYSIS
OF DATA OF PILOT PROJECT FOR THE
DEVELOPMENT OF WATER BODIES /
RESERVOIRS IN YAMUNA FLOOD PLAIN AREA
BY RETAINING EXCESS FLOOD WATER OF RIVER
YAMUNA DURING THE MONSOON SEASON FOR
RECHARGING THE GROUND WATER FROM
PALLA TO WAZIRABAD**



**Ministry of Jal Shakti,
Department of water Resources, RD & GR
Government of India
CENTRAL GROUND WATER BOARD
State Unit Office**

Comments

The report of the pilot project for the development of water bodies/ reservoirs near the Yamuna flood plain from Palla to Wazirabad in Delhi State has been received for assessment and further comments. Team comprising Tejdeep Singh Sc-D and N. Jyothi Kumar Sc-D and S. Ashok Kumar STA (HG) along with Ex.En I&FC Delhi Government visited the site on 14/11/2019.

On the basis of the field visit and going through the report of the pilot project submitted by I&FC department, Delhi Government following observations were made:

1. It has been mentioned in the report that there is an average rise of ground water in the tune of 1-1.3 m,
Observation: *Rise in water levels during the post-monsoon period in comparison with the pre-monsoon period due to recharge from monsoon rainfall is a natural phenomenon. For assessing of impact of the structures, water levels measured during the same period in two subsequent years in the area of influence of the project as well as outside the area of influence need to be compared.*
2. The ground water flow direction is right now towards the city in the study area, whereas physiographically the flow direction is towards Yamuna river.
Observation: *The reversal of ground water flow direction observed could also be due to the ground water trough created by over exploitation of ground water in and around study area. A comparison of the water table contours of the area during post-monsoon season before and after the implementation of the project will be required to substantiate the claim that the reversal in flow direction is due to the recharge from the artificial recharge structures.*
3. Percolation rate in the study area is about 81-96 mm/hr
Observation: *No scientific study has been carried out / data furnished in the report to substantiate the claim.*
4. During the Monsoon period/ flooding of river, river carries huge amount of silt along with which gets deposited as and when pondage is created. This will fill the pond. As mentioned in the report, siltation due to river silt is 52 % which is too high.
Observation: *The siltation rate reported is too high and is likely to reduce the effective life of the structures unless measures are taken to reduce/control the silt load.*
5. Cost-benefit Ratio
Observation: *Sufficient data is not yet available as it is too early to assess the cost-benefit ratio of the project.*

Related to Chapter I - Environmental Flow

सं०: UYRB/Tech-25/2019/1810(A-J)

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास एवं गंगा संरक्षण विभाग
ऊपरी यमुना नदी बोर्ड

नई दिल्ली, 03 दिसम्बर, 2019

Sub.: Minutes of the Presentation on the construction/creation of water bodies in Palla area of NCT of Delhi held on 18.11.2019 - reg.

Sir,

A presentation on the above subject was made by INRM Consultants Pvt. Ltd. in the Chamber of Member (WP&P), CWC and Chairman, UYRB on 18.11.2019 at 04:00 PM at Central Water Commission, Sewa Bhawan, R. K. Puram, New Delhi. The minutes of the presentation, duly approved by the Member (WP&P) and Chairman, UYRB is enclosed herewith for your kind information and necessary action.

भवदीय,

(Handwritten signature)

(राहुल वाष्ण्य)
उपनिदेशक

To:

1. The Chairman, Central Ground Water Board, Faridabad, Haryana.
2. The Chairman, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032.
3. Member Secretary, Principal Committee, National Green Tribunal, ED, NMCD, Major Dhyan Chand Stadium, New Delhi.
4. Member Secretary, Delhi Pollution Control Committee, 4th & 5th Floor ISBT, GT Karnal Road, Kashmere Gate, New Delhi-110006.
5. Sh. A. K. Gosain, Professor, Civil Engineering Department, IIT Delhi, Hauz Khas, New Delhi.
6. Chief Engineer (IMO), CWC, R. K. Puram, New Delhi.
7. The Chief Engineer (Zone-II), Irrigation and Flood Control Department, Government of NCT Delhi, L M Bund Office Complex, Shastri Nagar, Delhi-110031.
8. Sh. Sankalp Lahri, Director, INRM Consultants Pvt. Ltd. 87A, 2nd Floor, Sri Aurbindo Marg, New Delhi-110017.

Copy for kind information to:

1. PPS to Chairman, CWC, Sewa Bhawan, R. K. Puram, New Delhi-66.
2. PPS to Member WP&P, CWC and Chairman, UYRB, Sewa Bhawan, R. K. Puram, New Delhi-66.

Minutes of the presentation made by INRM on the construction/creation of water bodies in Palla area of NCT of Delhi on 18.11.2019.

Name of Project:

Construction/creation of water bodies/reservoirs in Yamuna flood plain area by retaining excess flood water of river Yamuna during the monsoon season for recharging the ground water from Palla to Wazirabad in Delhi.

Presentation made by INRM:

In this regard, I&FCD, Govt. of Delhi awarded the contract to JV of INRM Consultant Pvt. Ltd. and TTI Consulting Engineers Pvt. Ltd as Project Management Consultant. A power point presentation was made by INRM Consultant Pvt. Ltd. on 18.11.2019 at 4:00 p.m. in the chamber of Member(WP&P), CWC & Chairman, UYRB to present the Detailed Project Report on the analysis of data collected upon execution of Pilot Project at Sungarpur village.

The list of the participants is enclosed as **Annex-I**.

The consultant presented the necessity of the project, it's objective, scope of work, details/execution of the Pilot Project undertaken and the analysis of data collected upon the execution of the Pilot Project.

The details of the power point presentation are as below:

a) Necessity of Project:

Due to the depleting ground water levels in Delhi, water security of the state has become a very important aspect. Currently, the ground water during the non-monsoon season is not only depleting but is also in danger of getting highly saline. Several studies conducted by Delhi Jal Board, National Institute of Hydrology and IIT, Delhi have emphasized the fact that the stretch of Yamuna flood plain in Delhi has a very high recharge potential.

b) Objective of Project:

It is observed that during flood seasons, the Yamuna water reaches the higher elevations in the areas between the shanks. So, in order to use this excess water for improving the ground water quality and recharging the Yamuna flood plain, a pilot project was executed near Shank 16-17 of the Right Marginal Embankment. Further, the DPR was proposed with the objective of creation of the water bodies/reservoirs in the flood plains of Yamuna between main river course and right marginal embankment between Palla and Wazirabad.

c) Scope of Study, Data collection:

- To conduct Topographical survey, Hydrological / Hydrogeological analysis, Water quality tests, Assessment of hydrogeology including underground water level, sub- soil type, percolation tests, ground water levels, saline water interface, nature of aquifers available underground etc.
- To ascertain ownership details of land for water bodies and suggest modus operandi by liaising with government department(s).
- To prepare a Conceptual Plan and Detailed Project Report (DPR).
- To create reservoirs/ water bodies in the flood plain to store excess water released during the monsoon season to recharge ground water.
- To improve the aesthetic appearance of the river Yamuna and to improve the surrounding areas of water bodies / reservoirs from Palla to Wazirabad.
- Lot of data related to existing reports (DJB, CWC, CGWB etc), topographical surveys (I&FC), gauge various stations (I&FC, Govt of NCT Delhi), tube wells water levels, land details (village maps & ownership) have been collected and reviewed.

d) Conceptual Plan and Pilot Project:

It was presented that Conceptual Plan was prepared by the consultant on the basis of various studies and was submitted to I&FC Department of NCT of Delhi in June 2019. Further, it was subsequently forwarded to various stakeholders and departments for their orders. Based on the recommendation of the Principal Committee (NGT), Hon'ble NGT provided the approval for the execution of Pilot Project. In this regard, about 40 acre of land was identified in Yamuna flood plain in Sungarpur village and the Pilot Project was inaugurated by Hon'ble Chief Minister of Govt. of NCT of Delhi, Hon'ble minister of Jal Shakti, Govt. of India and Hon'ble Minister (I&FC), Govt. of NCT of Delhi on 9th August 2019 for execution.

e) Execution of Pilot Project:

A pond of 17.6acre area could only be excavated with an average depth of 1.5 m to store the flood water for recharging. The protection work, anti-erosion work of pond and appropriate inlets as per the design could not be taken up as the flood plain of Yamuna was supposed to be inundated soon. Ten piezometers were installed in and outside the RME to assess the quantity of recharge and direction of the ground water flow.

f) Outcome of Pilot Project:

- The percolation rate is about 81 to 96 mm/hr which is about $\frac{1}{4}$ as compared to that in lean season (about 375 mm/hr).
- Average rise in Ground Water Level at project location = 1.0 m to 1.3 m.
- Water level rise near Shank 6-7 (**where no pond was created**) is from **1 to 1.85m**.
- Total volume of Ground Water Recharge due to flood and creation of pond over the influence area = 2795.15 Million Litre.
- The recharge due to pond = 854.515 Million Litre.
- The ground water flow is towards the city as the water level in the piezometers near the river is higher than the ground water towards the city side.
- As stated earlier, the protection work, anti-erosion work of pond and appropriate inlets could not be taken up due to the high incoming floods, the excavated dumped earth got filled up in the pond. Also, the river carried considerable silt along with it thereby contributing silt to the filling of pond.
% filled up of pond due to siltation = 67%.

This siltation may further be distributed as:

- Siltation due to dumped material at the river side = 48%
- Siltation due to river silt = 52%

Due to the heavy silt up, Desiltation tank is proposed to be constructed to exclude the silt from the incoming water. But, as the tank is effective in low discharge, annual removal of silt is essential.

- Soil inhibiting good engineering properties needs to be brought from suitable burrow areas for the construction of embankment.

g) Cost Analysis of Pilot Project:

- Cost of creation of pond (only excavation) of Pilot project = Rs. 4.5 crores.
- Cost of creation of pond with protection/anti erosion works, inlets (including land lease of 3 years) = Rs. 19.11 crores.
- Annual maintenance cost including removal of silt = Rs. 18.18 lacs.
- **Total cost = Rs. 19.11 crores + Rs. 18.18 lacs = Rs. 19.2918 crores.**
- Water recharge due to pond (one year) = 854.515 Million litres.
- Benefits from water is one year @ Rs. 25 per KL = Rs (854.515 x 1000 x 25) = **Rs. 2.14 crores** (DJB water tariff is Rs. 25/KL).

Based on detailed discussions, following decisions were taken:

1. Pilot scheme as originally presented was to be implemented between shank no 6 & 7. Whereas the same was implemented between shank no 16 & 17 as land could not be made available. The changes in the location of implemented pilot due to non-availability of land was noted.
2. Pilot studies which were carried out by the consultant were very preliminary as the excavation of pond could not be completed as originally planned both in terms of its area and location. Also the results could not be independently authenticated by CGWB who could not be associated during the implementation of project by State.
3. Soil excavated during the creation of ponds should only be used for the construction of protectionwork, anti-erosion work of pond and appropriate inlets. Therefore, no soil should be brought from outside at the construction site.
4. Various tests required to be carried out by the INRM consultants for ascertaining the direction of flow and its extent, percolation rate, rise in ground water level etc. should be carried out in coordination with CGWB. The results so obtained must be authenticated by CGWB also to ensure that results and their interpretation remains objective.
5. Consultants should ensure that location of piezometers installed is finalised in coordination with CGWB such that their results can be verified with that of the results from existing piezometers of CGWB.
6. Provision of embankment and desilting chamber during the pilot phase (revised proposal) may require construction on the flood plains of Yamuna river. Further, design considerations alone do not establish that desilting chamber now proposed to be constructed may flush the sediments by providing sufficient escape velocity. These aspects need examination for which consultant may provide detailed calculations/ justifications before it is implemented.
7. The results show that rise in ground water level near Shank 6-7 (where no pond was created) is more than that observed in Shank 16-17 (where the pond was created). This means that even without any intervention, the ground water table registered significant rise. Further studies could be carried out only for one filling of reservoir thus providing limited data for interpretation. Studies may therefore need to be further continued at

least for one full flood season to identify the reasons for this and also to assess the efficacy of the project.

8. Pilot Project need further should be executed for one more year as the results obtained so far are quite inconclusive. Therefore, it is recommended to collect more data and carry out further studies in coordination with CGWB. After receiving more effective results of next season studies, further decision on the project can be taken.
9. The cost of the project implementation is significantly high compared to quantity of water harvested. State may accordingly take decision on its continuation based on overall economics.
10. Views of CGWB on pilot project may also be taken and considered.
11. Consultant has proposed to upscale pilot by construction of reservoirs in large area of 1000 acres. It was decided that as very limited data is available to establish efficacy of pilot project with reservoir area of 17.6 acre, upscaling of pilot may not be carried out on 1000 acre of area till efficacy of existing pilot project is established.

The meeting ended with a vote of thanks to the Chair.

Annex-I

List of participants present during the presentation made by INRM on the construction/creation of water bodies in Palla area of NCT of Delhi on 18.11.2019.

Sh. S. K. Halder, Member WP&P, CWC and Chairman, UYRB, Sewa Bhawan, R. K. Puram, New Delhi-66. – In chair.

Central Water Commission:

1. Sh. Vijay Saran, Chief Engineer (IMO), CWC, New Delhi.
2. Sh. Chaitanya K. S. Deputy Director, ISM-2 Directorate, CWC, New Delhi.

Upper Yamuna River Board:

1. Sh. D. P. Mathuria, Member Secretary, UYRB, New Delhi.
2. Sh. Rahul Varshney, Deputy Director, UYRB, New Delhi.
3. Smt. Ekta Sharma, Assistant Executive Engineer, UYRB, New Delhi.

Irrigation and Flood Control Department:

1. Sh. Sanjay Saxena, Chief Engineer (Zone-II), Irrigation and Flood Control Department, Government of NCT Delhi, L M Bund Office Complex, Shastri Nagar, Delhi-110031.
2. Sh. T. K. Prijith Rekh, Superintending Engineer, FC-II, Irrigation and Flood Control Department, Government of NCT Delhi, L M Bund Office Complex, Shastri Nagar, Delhi-110031.
3. Sh. Gagan Gaur, Executive Engineer, CD-VI, Irrigation and Flood Control Department, Government of NCT Delhi, L M Bund Office Complex, Shastri Nagar, Delhi-110031.

Central Ground Water Board:

Sh. Tejdeep Singh, Scientist 'D', Central Ground Water Board, Faridabad, Haryana.

Central Pollution Control Board:

Smt. Suniti Parashar, Scientist 'B', Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032.

INRM Consultants Pvt. Ltd.:

1. Sh. Sankalp Lahri, Director, INRM Consultants Pvt. Ltd. 87A, 2nd Floor, Sri Aurbindo Marg, New Delhi-110017.
2. Sh. Vipin Kumar Singhal, INRM Consultants Pvt. Ltd. 87A, 2nd Floor, Sri Aurbindo Marg, New Delhi-110017.
3. Sh. Pijush K. Datta, INRM Consultants Pvt. Ltd. 87A, 2nd Floor, Sri Aurbindo Marg, New Delhi-110017.

Related to Chapter I - Environmental Flow



Central Pollution Control Board
(Ministry of Environment, Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar,
Delhi - 110032

Minutes of the meeting held on 17/12/2019 in CPCB to monitor the impact on ground water regime due to pilot project w.r.t Govt. of NCT Delhi in compliance to Hon'ble NGT (PB) Delhi order dated 11.09.2019 in O.A. No. 06/2012 in the matter of Manoj Mishra vs. Union of India & Ors.

A meeting was convened on 17/12/2019 at 11.30 AM in Committee Room, WQM-I Division, under the Chairmanship of Sh. A. Sudhakar, DH, WQM-I Division with the officials from Irrigation & Flood Control (I&FC) Dept. Delhi, Delhi Pollution Control Committee (DPCC), Central Ground Water Authority (CGWA) and CPCB to ensure compliance to Hon'ble NGT Order dated 11.09.2019 in O.A. No. 06/2012 in the matter of Manoj Mishra Vs. Union of India & Ors. List of participants is given at Annexure I.

Sh. A. Sudhakar, DH, WQM-I welcomed the officials attending the meeting and informed about the directions of Hon'ble NGT dated 11.09.2019 passed in O.A. No. 06/2012. He also requested Irrigation and Flood Control Department, Delhi representatives to appraise on the details of artificial recharge pond in Yamuna flood plain area during the monsoon season for recharging the ground water and about estimation made with respect to recharge of ground water.

I&FC Dept. Govt. of Delhi representative informed that work awarded to a consultant viz. Integrated Natural Resources Management (INRM) and he will appraise the relevant issues. INRM representative made a presentation on necessity of the project, its objective, scope of work, detailed execution of the pilot project undertaken and the analysis of data collected. The salient features of project highlighted by INRM representative are as follows:

- a) The excavated area of pond was about 17.6 acre with an average depth of excavation 1.5 m.

- b) The average rise of GW was estimated to be 1.0 to 1.3m. Percolation rate was 81-96 mm/hr. Total volume of ground water recharge due to flood and creation of pond over the influence area was observed as 2795.15 Million Litres and the recharge due to pond is about 854.515 Million Litres.
- c) Rise in GW level from 1 to 1.85 m was observed near Shank 6-7.
- d) Ten piezometers were installed in and around the Right Marginal Embankment (RME) to assess the quantity of recharge as well as to assess the direction of ground water flow.
- e) Siltation due to dumped material at river side was observed at 48% and due to river silt is about 52%.
- f) The estimated total cost for the pilot project was about Rs. 19.3 Crore and estimated benefit of Rs. 2.14 Crore per year.

The officials of I&FC Dept. explained that this is a 3 year pilot project and only conceptual plan was submitted and the Detailed Project Report (DPR) is yet to be prepared. However the Principal Committee (NGT) sanctioned approval for execution of the pilot project.

The officials of CGWA enquired about the reference GW level before installation of piezometer under the pilot project as well as pre-monsoon ground water level. It was classified by I&FC Dept. that water level was about 4.5 meters in June 2019 below GW level.

The comments of CGWA on pilot project were also discussed. CGWA officials suggested that baseline analysis need to be carried out thoroughly considering (i) Criteria for selection of site for recharging pond (ii) justification for location selected (iii) improvement in water level in installed Piezometer for ascertaining ground water recharge in the vicinity of artificial recharge ponds before commencement of such type of pilot project.

Upon deliberations, following decisions were taken:

1. It was advised to install piezometers at suitable locations on both sides of River Yamuna depending on the GW flow direction.

2. It was agreed unanimously to do the scientific and technical analysis with respect to percolation rate and recharging of GW as Piezometer alone cannot exactly tell the influence of recharge.
3. Rise in ground water level was observed to be high in Shank 6-7 compared to Shank 16-17, which shows that without any intrusion there is a significant rise in GW level. The CGWA suggest that this average rise in GW could be due to monsoon rainfall, a natural phenomenon. Therefore, a periodic assessment is a necessary to ensure the efficacy of the project for at least 3 consecutive years.
4. The project proponent was suggested to look into the comments of CGWA also. The measures required for anti-erosion of pond and removals of silt accumulated were discussed.
5. The committee has also decided to take a tour of pilot project in the first/second week of January 2020 to assess salient feature of pilot project.
6. Since the project is a 3 year conceptual plan and only first year work has been carried out, therefore, it is suggested to continue the project for the next two years to assess efficiency of pilot project.

Meeting ended up with vote of thanks to the Chair.

- 00 -

Annexure I

List of Participants

1. Sh. A Sudhakar, DH, WQM-I, CPCB
2. Sh. J.C. Babu, Scientist- E, WQM-I, CPCB
3. Smt. Suniti Parashar, Scientist-B, WQM-I, CPCB
4. Sh. Vishal Gandhi, Scientist-D, UPC-II, CPCB
5. Dr. Nandita Moitra, Sr. Scientist, DPCC
6. Sh. Saidul Haq, Scientist -D, CGWB
7. Sh. Gagan Gaur, Executive Engineer, I&FC Dept.
8. Sh. Sanjay Saxena, Chief Engineer, I&FC Dept.
9. Sh. Mukesh Kumar, SEFC III, I&FC Dept.
10. Sh. Vipin Kumar Singhal, Engineer, INRM Consultant

Sheet 2.



केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT FOREST & CLIMATE CHANGE GOVT OF INDIA

Speed Post/E-mail

F. No. A-14011/1/2019-WQM-I

17.01.2020

To

The Secretary (I&FC)
L.M. Bund Office Complex,
Shastri Nagar, Geeta Colony,
New Delhi-110031

Sub: Minutes of 2nd meeting held on 17/12/2019 in CPCB to monitor the impact of ground water regime due to pilot project w.r.t. Govt. of NCT Delhi in compliance to Hon'ble NGT (PB) Delhi order dated 11.09.2019 in OA No. 06/2012 in the matter of Manoj Mishra vs. UOI & Ors.

Sir,

This has reference to the 2nd meeting held in CPCB on 17/12/2019 on the above captioned subject. Please find enclosed herewith minutes of 2nd meeting for reference and record.

As a follow up of the meeting a visit to the pilot project site is **scheduled on 06/02/2020** by the committee members. Therefore, it is requested to intimate a line of confirmation by an email to asudhakar.cpcb@nic.in and jcb.cpcb@nic.in to arrive positively for further action.

Yours faithfully,

(A. Sudhakar)

Divisional Head, WQM-I

Encl: As above

'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली-110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032
दूरभाष/Tel: 43102030, 22305792, वेबसाइट/Website: www.cpcb.nic.in

Related to Chapter I - Environmental Flow



F.No. TE-16015/38/2018/NMCG

राष्ट्रीय स्वच्छ गंगा मिशन
National Mission for Clean Ganga

Dated: 18/12/2019

Minutes of Meeting

Sub: Minutes of meeting dated 09.12.2019 -reg.

The minutes of meeting held on 09.12.2019, to review the progress made in study titled "environmental flow assessment for Yamuna river from Hathanikund barrage to Okhla barrage", is enclosed herewith for information and further necessary action.

This issues with the approval of Competent Authority.

Yours faithfully,


(Dheeraj Singhal)
Deputy Director

To:

1. Director, NIH-Roorkee, IIT-Roorkee, Uttarakhand- 247667.
2. Dr. Anupama Sharma, Scientist 'E', NIH-Roorkee, IIT-Roorkee, Uttarakhand-247667.
3. Chairman, Central Ground Water Board, Bhujal Bhawan, NH-IV, Faridabad-121001.
4. Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, New Delhi-110032.
5. Principal Secretary, Irrigation & Water Resource Department, Govt. of Uttarakhand, Dehradun.
6. Principal Secretary, Irrigation & Water Resource Department, Govt. of Uttar Pradesh, Lucknow.
7. Principal Secretary, Irrigation & Water Resource Department, Government of Haryana, Sinchai Bhawan, Sector 5, Panchkula, Haryana-134108.
8. Secretary, Irrigation & Flood Control Department, Govt. of NCT of Delhi, L.M. Bund Office Complex, Shastri Nagar, New Delhi-110031
9. Director, Wild Life Institute of India, Post Box-8, Chandrabani, Dehradun-248001.
10. Director, National Environmental Engineering Research Institute, Nehru Marg, Nagpur-440020.
11. Chief Engineer, P&D Organization, Central Water Commission, Sewa Bhawan, R.K. Puram, New Delhi-110066
12. Chief Engineer, HSO, Central Water Commission, Sewa Bhawan, R.K. Puram, New Delhi-110066



राष्ट्रीय स्वच्छ गंगा मिशन
National Mission for Clean Ganga

13. Chief Engineer, Yamuna Board Organization (YBO), Central Water Commission, Sewa Bhawan, R.K. Puram, New Delhi-110066.
14. Sh. A.K. Sahoo, Sr. Scientist, ICAR-CIFRI, Krishi Bhavan, Raisina Road, New Delhi -110001.
15. Prof. A.K. Gosain, Department of Civil Engineering, IIT- Delhi, New Delhi-110016.
16. Prof. Vinod Tare, Prof. IIT-Kanpur, Uttar Pradesh-208016.
17. Sh. Suresh Babu, Director, WWF-India.
18. Principal Director, NH Division-INTACH, 71- Lodhi Estate, New Delhi-110003.

Copy to:

1. Secretary (D/o Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti) cum Chairman of Principal Committee of Hon'ble NGT (Yamuna).
2. PS to Director General, NMCG, New Delhi.
3. Smt. Shailaja Chandra (former Delhi Chief Secretary), Member- Monitoring Committee (Yamuna)
4. Sh. B.S. Sajwan (former expert member, Hon'ble NGT), Member- Monitoring Committee (Yamuna)
5. PS to Executive Director (Tech.)

Sub: Minutes of Meeting dated 09.12.2019 on review of progress of study for assessment of environmental flows of river Yamuna from Hathnikund to Okhla barrage.

A meeting under Chairmanship of Secretary, D/o Water Resources, River Development & Ganga Rejuvenation (WR, RD &GR), Ministry of Jal Shakti was held on 09.12.2019 to review the progress made in the study titled "environmental flow assessment of river Yamuna from Hathnikund to Okhla barrage". The meeting was attended by representatives from National Institute of Hydrology (NIH)- Roorkee and members of the Committee constituted to guide study for assessment of environmental flow of river Yamuna from Hathnikund barrage to Okhla barrage. List of participants of meeting is enclosed at **Annexure-I**.

2. At the onset, Secretary, D/o WR, RD &GR, remarked about the dire state and lost connect of people with the river Yamuna in Delhi's 22 km long stretch. The need for flows for rejuvenation of river Yamuna in Delhi was emphasised.

3. A presentation was made by NIH officials (copy enclosed) detailing about the study objective, methodology for assessment of environmental flows adopted, analysis of flow data, implementation-management strategies etc.

Diversions and water abstraction for irrigation and domestic water supply, uncontrolled Groundwater Abstraction, Water quality degradation, Encroachment and dumping of waste and Sand mining, were presented as some of the issues & challenges faced by river Yamuna at present. **It was pointed out by Secretary that issue of sand mining is not limited to river Yamuna but it has affected all the rivers of the country. It was suggested that the issue of sand mining may be discussed separately by the Committee.**

4. Thereafter, details of field survey for habitat requirement were presented by NIH. It was informed that a field survey was conducted by NIH-Roorkee in collaboration with Wild Life Institute of India (WII) during October, 2019 at Hathnikund, Yamuna Nagar and Panipat. Based on the observations made during the field survey and literature available from CIFRI, *Bangana dero* and *Raiamas bola* has been selected as indicator fish species. It was also stated that survey will be conducted in further downstream reached of the river in due course.

The selected indicator species, *Bangana dero* and *Raiamas bola* were observed to be thriving well in run habitat of channel with depth ranges from 90 to 120 cm with velocity 0.1 m/sec. Thereby, it was stated that **ensuring adequate water depth of 90 to 120 cm at riffle/run habitat will safeguard fish diversity in Yamuna river.**

5. Water quality data of river Yamuna at Ponta Sahib, Kalanaur, Mawi, Palla and Delhi were then presented. It was reported that data has been obtained from CWC for period of 2013-2018. **It was recommended that water quality data may be**

compared and validated w.r.t. water quality data of river Yamuna available with Central Pollution Control Board.

The Dissolved Oxygen (DO) levels in river Yamuna from upstream of Wazirabad barrage (Sonia Vihar water sports club) to Dahesara village were observed to be between 10 and 11 mg/l. The high levels of DO were attributed due to presence of algae and aquatic plants/ weed. It was suggested that DO levels may be observed during day and night time both for better understanding of variation of DO levels.

For Wazirabad barrage to Okhla barrage the levels of BOD were stated to be about 40 mg/l and dilution upto 10 times may be required to meet the desired water quality. It was argued by Prof. Vinod Tare that focus should be on DO levels of the river rather than BOD levels. It was emphasized by Secretary that objective of environmental flows should be kept in consideration whether it is to improve water quality of the river through dilution or to meeting ecological requirement of river.

6. Further, details about Hydrologic modeling using SWAT model was presented by NIH representative. It was stated that unregulated discharge (virgin flows) has been generated using SWAT at all gauging sites after calibration at Hathnikund barrage.

It was informed by Prof. Tare that virgin flow estimations have been done while preparing Ganga River Basin Management Plan and suggested that the same may be referred and results may be compared.

It was also argued that whether ground water-surface water interactions were taken into account while estimating virgin flows of the river. **It was recommended that ground water data for period of 1970s may be used to mimic the virgin flow conditions. The data may be obtained from CGWB.**

7. Afterwards, minimum discharge required at different locations to maintain a depth of 90 cm (depth required for key fish species) was presented by NIH. At Kalanaur, Mawi, Bhagpat and Palla flows required during lean season to maintain depth of 90 cm were stated to be 40 cumec, 16 cumec, 32 cumec and 38 cumec respectively. The stated flows at these locations are to be further refined.

It was enquired for which width this depth of 90 cm will be available at these locations. Further, it was remarked by Secretary that these figures doesn't provide the quantum of flows required to be released from Hathnikund barrage and Wazirabad barrage.

8. After above discussions, following decisions were taken:

- i. NIH shall submit an interim report on the study by the end of December, 2019.
- ii. The final report shall clearly state the quantum of flows to be released from Hathnikund barrage and Wazirabad barrage to meet environmental flows requirement of river Yamuna at all location (upto Okhla barrage).
- iii. The study shall also reflect upon the present arrangement of water sharing of river Yamuna among States. The measures to make water available for river including management of ground water extraction and ground water recharge shall be provided in the final report.
- iv. Another meeting of the Committee shall be held in March 2020 before submission of final report.

Related to Chapter I - Environmental Flow

Chapter 8

SUMMARY AND CONCLUSIONS

8.1 Field Surveys and Data Analysis

The study deals with the assessment of environmental flows by using hydrodynamic and hydrological modelling approach. A variety of datasets are required as input to the models as well as to validate the model outputs, such as observed river flows, inflows and releases from barrages, river cross sections, DEM, observed rainfall and temperature, land use land cover maps, soil maps etc. Besides the river water quality, the study also investigates the variation in groundwater levels over a period of more than four decades. All such necessary data were collected from respective agencies. In addition, exhaustive field surveys have been carried out for the following:

- ascertain the keystone fish species and their habitat requirement based investigations in the river, and
- river cross-section surveys at close spaced intervals

All the data were processed to analyse the river flows and water quality in different reaches. Water quality analysis have shown that between the Wazirabad and Okhla barrage, the river receives approx. 6140 kg/hr BOD load out of which around 70% load is contributed through Nazafgarh drain. The average non-monsoonal DO value in the river stretch is 0.4 ± 0.12 mg/l as O_2 . However, during the field survey by NIH team, the DO value in this stretch was non-detectable indicating the BOD load to the river higher than the assimilative capacity of the river. Thus, Delhi is the most critical stretch of Yamuna, however, the contamination starts from Paonta Sahib as is evident from the nutrients concentration in the river. In terms of organic contamination, the stretch downstream of Mawi is contaminated and needs immediate attention. The DO values also indicate the same. Although, the water quality upto Wazirabad barrage is good for fish proliferation, the reduction in DO values is a cause for concern.

8.2 Keystone Fish Species

Field surveys have revealed three major fish habitats types such as pools, riffles and runs at the sampling sites in Yamuna river. The identified keystone fish species, *Bangana dero* and *Raiamas bola* are thriving well in run habitat of channel with depth ranging from 90 to 120 cm and velocity in the range of 0.1 m/sec. It has been observed that wherever these species are present, the other economically important species and other small barbs and minnows also thrive well. Hence, ensuring adequate water depth (90 - 120 cm) and flow (0.1 m/sec) at riffle/run habitat in Yamuna will safeguard the fish diversity in Yamuna river.

8.3 Integrated Modeling and Development of E-flow Regime

The integrated hydrologic and hydrodynamic modeling approach has been adopted to assess e-flows between Hathnikund barrage and Okhla barrage. The hydrological model

SWAT has been used to simulate streamflow (discharge), overland flow, groundwater recharge, evapotranspiration (ET) and total water yield in the study reach. For the hydrodynamic analysis of streamflows in Yamuna river, the HEC-RAS 1D model has been employed. The local flows in the study reach have been incorporated using simulated flows obtained from SWAT. Using this integrated approach, the hydrodynamic variables such as discharge, water depth and water velocity have been computed at different sections of the river.

Simulations using the SWAT model for regulated and unregulated flows show that in case of regulated flow condition, the observed flow is almost zero during lean period at all gauging sites; however, under virgin conditions (considering no structure at Hathnikund), significant amount of flows are available at all the gauging sites even during the lean period.

HEC-RAS has been used to derive depth vs discharge curves at different river sections utilizing observed discharge data for non-monsoon and monsoon seasons for the computation of e-flows. Using the developed depth vs discharge curves for different sites, the minimum flow values required for maintaining suitable physical habitat for keystone fish species in terms of flow depth have been estimated at the four gauging sites namely Kalanaur, Mawi, Baghpat and Palla.

The minimum required flow values have been used to establish the e-flow regime at the above-mentioned four gauging sites. It may be noted here that the e-flows regimes presented in the report are preliminary owing to the fact that the recently surveyed river cross-sections at close spaced intervals remain to be incorporated in HEC-RAS. The HEC-RAS model with cross-sections at close spaced intervals would yield values of flows with greater accuracy for the respective flow depths.

Annexure - C-2/1

Related to Chapter 2: DDA and Demarcation of the Flood Plains and Conservation Activities

The para wise response to Yamuna Pollution Monitoring Committee is submitted as under:

S.No	Detail of Para.	Response by DDA																
1.	Development of south biodiversity park on 167 Ha. land	The work has been entrusted to Prof. C.R. Babu, CEMDE (Delhi University) The work constitutes the removal of hyacinth from the existing waterbodies, construction of wetlands, paths, plantation in first phase and treatment of incoming sewage water by construction of constructed wetlands. The funds (29 lacs INR) for manual work has been released to Prof. C.R.Babu on 15.11.2019. The civil work for construction of 11 no. of wetlands including deeping of waterbodies at Khijrabad and hindon-cut wetland area and fencing etc. has been awarded to M/S K.R. Anand. The work was held up due to construction ban imposed by CPCB, mobilization completed, and work will be started by 02.01.2020.																
2.	Demarcation of 1 in 25 years floodplains, fixing-up of bollards, fencing, installation of CCTV cameras and deployment of security guards in the floodplains	<p>The demarcation of 1:25 years flood plain of river Yamuna pertains from Wazirabad to Jaitpur on both banks. As per the latest direction of Hon'ble NGT dated 11.09.2019. The work for reinstallation of bollards along with Geo-reference was initiated/ awarded immediately to M/S M&G Associates on 29.08.2019.</p> <p>The floodplains stretch from Wazirabad to ISBT and from Sun dial to Dhobi ghat stands marked by providing 82 no. and 56 no. bollards. (250 mm dia, 1 m. high with 1x1x1 m. footing) respectively (138Nos.)</p> <p>The Ring Road from Yamuna bazaar to Sun dial and the road number 13/A from Dhobi Ghat to JaitpurGhat and further embankment upto Delhi Haryana border acts/ mark the floodplain boundary on Western bank. Similarly, the Pushta road on the Eastern bank mark the entire floodplain boundary.</p> <p>As such the 90% work for demarcation work stands completed and the balance was held up due to construction ban imposed by CPCB. It will be completed in all respects (by installation of bollards, flags (6-meter-high) in between the installed bollards for which work is in award stage besides erection of Signage's, 9-meter-highon embankment has been taken up and the work is in tendering process) by 31st January 2019, the work will be completed by 15 march 2020</p> <p>Further it is submitted that demarcation of 1 in 25 years Yamuna floodplains of return period with flood of 2011 having HFL 206.00 m. adopted as a base on the recommendation of IIT Delhi got prepared by CE/irrigation (IFC) through GSDL as per guidelines of NGT was earlier carried out, 100 no. bollards were installed as depicted in the plan at following locations as per the table given below:</p> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">Details of Bollards fixed</th> </tr> </thead> <tbody> <tr> <td>JaitpurGhat</td> <td>7 No.s</td> </tr> <tr> <td>Dhobi Ghat</td> <td>17 No.s</td> </tr> <tr> <td>MajnuKaTeela to Signature Bridge</td> <td>22 No.s</td> </tr> <tr> <td>KudasiaGhat near ISBT</td> <td>19 No.s</td> </tr> <tr> <td>Kali Basti near railway line</td> <td>11 No.s</td> </tr> <tr> <td>Nizamuddin Bridge to DND</td> <td>24 No.s</td> </tr> <tr> <td>Total</td> <td>100 No.s</td> </tr> </tbody> </table> <p align="center">This plan along with report was even submitted to Hon'ble NGT and</p>	Details of Bollards fixed		JaitpurGhat	7 No.s	Dhobi Ghat	17 No.s	MajnuKaTeela to Signature Bridge	22 No.s	KudasiaGhat near ISBT	19 No.s	Kali Basti near railway line	11 No.s	Nizamuddin Bridge to DND	24 No.s	Total	100 No.s
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Total	100 No.s																	

		Principal Committee to Hon'ble NGT vide letter no. CE(EZ)13(20)2015/NGT/2829.
3.	Review of demarcation, action(s) taken to safeguard the floodplains	<p>The reply on the demarcation of the floodplains has already been explained in para no. 2 above.</p> <p>To save-guard the floodplains, the following measures are in place.</p> <p>Deployment of private security guards</p> <ul style="list-style-type: none"> • 100 number security guards with four number Mobile Vans to provide both Mobile and Static Patrolling of entire flood plain from Wazirabad to Okhla has in place for round the clock vigil. • 170 number challans each amounting Rs. 50,000 against the violators have been issued with an intimation to all concerned including Commissioner Transport of concerned area. Rupees four lakh has been realized and the rest is in process of realization. Plying of 23 numbers of vehicles have been blocked for further Govt. transactions till the deposition offline with DDA and intimation to this effect to the concerned Transport Commissioners. • The matter for deployment of ex-serviceman as security guards for effective round the clock visil was discussed and DDA has acceded and has initiated the process for hiring Ex-service man from requisite agencies. <p>Installation of CCTV cameras</p> <ul style="list-style-type: none"> • The progress on the installation of the CCTV cameras was even intimated earlier to Monitoring Committee. Further it is submitted that 36 out of 99 no. CCTV cameras has been installed and are functional, the laying of optical cable in Smitivan and Jaitput is almost complete and further work is held-up due to installation of pota-cabin for SCR which was held-up due to imposition of construction ban by CPCB. It will be taken-up and will be completed by 20.01.2020. • The laying of cable in Usmanpur and Biodiversity park is held-up due to existence of flood water in the floodplains and will be taken up on receding/ drying-up of floodwater. The details progress is attached at Annexure 'A' • It has been observed that in reaches of Yamuna Bank where the CCTV cameras have been made functional the illegal dumping of debris has been siezed or reduced to a remarkable level. The footage in the main/sub-control room alerts the attendant that vehicle, if any, with debris is being approached in the floodplain and immediately he warned on public address system to leave the flood plain as his identity has been recorded and will be fined/ vehicle will be impounded. Simultaneously informed the patrolling security guard party about the location of the violator for immediate catching of the vehicle and to inform the police helpline no 100.

		<p>Surveillance by Satellite/drones:</p> <ul style="list-style-type: none"> • ISRO has been engaged for mapping of vacant plots of DDA including all areas of unauthorized colonies and the satellite imageries will be taken/ stored half yearly/annually and as such will reveal the encroachment in the intertwining period. This will also cover the flood plain. • Further DDA has engaged IIT Roorkee and survey of India for mapping of boundaries of unauthorized colonies vacant plots etc. through drone survey. <p>Removal of C&D waste:</p> <ul style="list-style-type: none"> • The 2600 Cum. of C&D waste deposited in floodplain near Hazrat Nizamuddin Bridge and opposite Sarai Kale Khan has been lifted to IL&FS site at Shastri-park. <p>Removal of illegal encroachment:</p> <ul style="list-style-type: none"> • A drive to remove the illegal cultivation by encroachers has been taken up and the area evicted vis-à-vis, the demolition programme carried out is depicted as per Annexure ‘B’ • It is pertinent to mention that a lot of public resistance/ resentment has to be faced by DDA staff during demolition programmes. In one of the instance even the sitting MLA of Laxmi Nagar constituency, Shri Nitin Tyagi had manhandled and misbehaved the field staff of DDA as well as the contractor and torn off the working drawings held by the field staff. After this incident an FIR has been lodged against Shri Nitin Tyagi in Laxmi Nagar police station. • Commissioner (LM) informed that 2 no. cases in Hon’ble Supreme Court dismissed regarding extension of stay to vacate the land in Yamuna floodplains by 31.12.2019. other such cases will also be dismissed by various courts on similar grounds. • Commissioner (LD) is perusing with other agencies and issuing the reminders for Retrieval of land temporarily allotted to various agencies stating it’s a time bound project monitored by Hon’ble NGT.
4.	River Front Society/ Dedicated Institutional Setup	<ul style="list-style-type: none"> • The issue was discussed and it was decided that a society being set up for Biodiversity parks which will cover the areas of floodplains being developed as Biodiversity parks. • DDA is working on a dedicated Institutional setup also
5.	DDA to provide information to MC on 10 projects to be taken-up for development of 1267 Ha.	The details are annexed at Annexure ‘C’

Related to Chapter 2: DDA and Demarcation of the Flood Plains and Conservation Activities

ANNEXURE-A

Name of work	: Land Protection work in Trans Yamuna Area
Sub Head	: SITC of CCTV & allied Equipments for surveillance of Yamuna River Front in Delhi Area.

The work for installation of 99 nos. CCTV cameras at 33 nos. locations from Wazirabad to Jaitpur to check the illegal dumping of malba into the Yamuna flood plain was awarded to M/s Technosys Security system Pvt. Ltd. and the work is in progress. The work of installation of cameras from Old Iron Bridge to Yamuna Bank and at Khizrabad comprising of 27 nos. CCTV cameras at 9 different locations monitored by 3 Nos. master control room/sub control room at Geeta colony, Golden Jubilee Park and at Khizrabad covering area from old railway bridge to Yamuna bank and at Khizrabad stands completed with laying of approx. 20 KM OFC cable under Phase-I. The work under Phase-II where remaining 4 nos. sub control rooms for catering of remaining 75 nos. CCTV cameras is in progress as per detailed below:

Sl. No.	MCR/SCR	No. of Locations	Total No. of Cameras	No. of Installed Cameras	Balance Cameras to be installed
1.	Geeta Colony	05	15	15	NIL
2.	Golden Jubilee	03	09	09	NIL
3.	Khizrabad	04	12	12	NIL
4.	Smriti Van	06	18	NIL	18
5.	Jaitpur	06	18	NIL	18
6.	Usmanpur	02	06	NIL	06
7.	Bio-diversity Park	07	21	NIL	21
		34	99	36	63

1. **Geeta Colony MCR/SCR**
 - a. MCR alongwith 5 nos. locations catering to 15 nos. CCTV cameras is operational under Phase-I.
2. **Golden Jubilee SCR:** Completed under Phase-I and operational.
3. **Khizrabad SCR**
 - a. SCR alongwith 4 nos. locations catering to 12 nos. CCTV cameras are operational.
4. **Smriti Van SCR**
 - a. Sub Control Room (SCR) is being under construction, which will cater to 6 No. locations for installing 18 Nos. CCTV cameras.
 - b. Approx. 13 KM OFC cable have been laid between Mayur Vihar Phase-I to Nizamuddin Setu and in Patches between Smriti Van and furniture market.
 - c. After obtaining approval from NHAI on dated 17.09.2019, OFC cable is laid along the Nizamuddin bridge at NH-9 for approx. length of 750 Metre.
 - d. However the work is stopped further due to illegal encroachment / Jhuggis / Private land at just after Nizamuddin bridge at NH-9 and near furniture market.

Hon'ble High Court of Delhi stayed the removal of Jhuggies & DDA taken a stay, the work will be taken up accordingly.

5. **Jaitpur SCR**

- a. The entire Jaitpur area where 6 Nos. poles with 3 nos. cameras on each pole are to be provided falls under the jurisdiction of UP irrigation.
- b. Permission for crossing GAIL pipeline at Jaitpur has been sought from GAIL and as demanded by GAIL demand draft amounting to Rs.1,29,800.00 has been submitted to GAIL on dated 10.12.19 for crossing GAIL pipeline.

6. **Usmanpur SCR**

- a. There are 2 nos. locations in Usmanpur where 6 Nos. CCTV cameras will be provided.
- b. Location for constructing of SCR has been decided at Usmanpur Pusta -3. Construction of SCR and laying of OFC in un-submerged area is in progress.
- c. Permission has been obtained on dated 10.10.2019 from I&FC Deptt. Of GNCTD for laying of OFC cable between Usmanpur to Bio-Diversity Park.
- d. Some area is illegally encroached at Usmanpur Pusta No. 1 & 3 for 2 locations and around 90 % of area where OFC cable to be laid is submerged under flood water. The work in this area will only be started after receding of flood water.

7. **Bio-Diversity SCR**

- a. There are 6 nos. locations in Bio-diversity Park area where 18 Nos. CCTV cameras will be provided.
- b. Location for constructing of SCR is under review in light of submerged area.
- c. Permission has been obtained from I&FC Deptt. Of GNCTD for laying of OFC cable between Usmanpur to Bio-Diversity Park.
- d. Some area is illegally encroached at between Ram Ghat to Bio-Diversity Park for 6 Nos. locations and around 90 % of area where OFC cable to be laid is submerged under flood water. The work in this area will only be started after receding of flood water.

Note : No construction / digging work could be done from 26.10.2019 to 09.12.2019 due to ban imposed in Delhi / NCR by Hon'ble Supreme Court of India / EPCA.

7 July 16/12/19
Executive Engineer (Elect.)
Electrical Division no. 1 / DDA.

Related to Chapter 2: DDA and Demarcation of the Flood Plains and Conservation Activities

OFFICE OF THE DEPUTY DIRECTOR (HORT.)**HORTICULTURE DIVISION-IX/DDA****VIVEK VIHAR, DELHI-95**

Demolition programs carried out by Hort. Div. IX/DDA in '0' Zone area till date:

S.No.	Date	Name of area	Area retrieved	Police Station	Remarks
1	10.05.2018 & 11.05.2018	DDA land at Western bank of River Yamuna Flood Plain from Old Iron Bridge to Geeta Colony Bridge	100 Acre (Approx.)	Kotwali Chandni Chowk	Jhuggis/Chappars are under stay granted by Court
2	14.05.2018 & 15.05.2018	DDA land at Western bank of River Yamuna Flood Plain from Geeta Colony Bridge to ITO Barrage	75 Acr. (Approx.)	Daryaganj	Jhuggis/Chappars are under stay granted by Court. And on 2nd day, demolition got failed due to withdrawl of police force from site for VVIP arrangements
3	24.07.2018 & 25.07.2018	DDA land at Western bank of River Yamuna Flood Plain from OLD Iron Bridge to Geeta Colony Bridge	100 Acre (Approx.)	Kotwali Chandni Chowk	Total non-stay agricultural land was retrieved from encroachers
4	26.07.2018	DDA land at Western bank of River Yamuna Flood Plain near ITO barrage	03 Acre (Approx.)	L.P Estate	After judgement of Hon'ble High Court. mentioned land was retrieved
5	11.09.2018	DDA land at Western bank of River Yamuna Flood Plain opposite Rajghat Power house/Mazar area	1.2 Acre (Approx.)	I.P Estate	05 Nos. Mazaars were not disturbed
6	11.12.2018	DDA land at Western bank of River Yamuna Flood	1 Acre (Approx.)	Daryaganj	Got Police force late, demolition

		Plain from Geeta Colony Bridge to Shantivan drain			was of 45 mins
7	12.12.2018	DDA Land at Western bank of River Yamuna flood Plain from Geeta Colony Bridge to Shantivan drain	8 Acre (Approx.)	Daryaganj	Demolition duration was of 1hr 15 mins
8	18.12.2018	DDA Land at 2nd Pusta, Old Usmanpur	4 Acre (Approx.)	New Usmanpur	75 Chappars were demolished
9	22.12.2018	DDA Land at Western bank of River Yamuna flood Plain under Ring Road Flyover opp. Rajghat Power house near ITO Barrage	1 Acre (Approx.)	I. P. Estate	Ragpickers were removed from the area and areas was cleaned
10	24.12.2018	DDA Land at Western bank of River Yamuna flood Plain under Ring Road Flyover opp. Rajghat Power house near ITO Barrage	1 Acre (Approx.)	I. P. Estate	Further cleaning of area was done
11	26.12.2018	DDA Land at Eastern bank of River Yamuna near Signature bridge	24 Acre (Approx.)	New Usmanpur	Total Non-Stay agricultural land was retrieved from encroachers
12	27.12.2018	DDA Land at Western bank of River Yamuna flood Plain from Old Iron Bridge to Geeta Colony Bridge.	2 Acre (Approx.)	Kotwali, Chandni Chowk	Total Non-Stay agriculture land was retrieved from encroachers
13	03.01.2019	DDA Land at Western bank of River Yamuna flood Plain from Geeta Colony Bridge to Shantivan drain	8 Acre (Approx.)	Daryaganj	Demolition duration was 3hrs
14	04.01.2019	DDA Land at Western bank of River Yamuna flood Plain from Geeta Colony Bridge to Shantivan drain	-	Daryaganj	Demolition could not get start
15	09.04.2019	DDA Land at Eastern bank of River near Usmanpur Village	25 Acre (Approx.)	Shastri Park	Total Non-Stay agriculture land was retrieved from encroachers
16	10.10.2019	DDA Land from Vikas Marg to Geeta Colony bridge (Eastern Bank of Yamuna Flood Plain)	40 Acre (Approx.)	Laxmi Nagar	Total Non-Stay agriculture land was retrieved from encroachers
17	11.10.2019	DDA Land from Vikas Marg to Geeta Colony bridge (Eastern Bank of Yamuna Flood Plain)	80 Acre (Approx.)	Laxmi Nagar	Total Non-Stay agriculture land was retrieved from encroachers

18	16.10.2019 & 17.10.2019	DDA Land from Vikas Marg to Geeta Colony bridge (Eastern Bank of Yamuna Flood Plain)	-	Laxmi Nagar	Demolition Could not get started as police force not provided by SHO PS Laxmi Nagar
19	14.11.2019	DDA Land from Vikas Marg to Geeta Colony bridge (Eastern Bank of Yamuna Flood Plain)	-	Laxmi Nagar	Demolition Could not get started as police force not provided by SHO PS Laxmi Nagar
20	21.11.2019	DDA Land from Vikas Marg to Geeta Colony bridge (Eastern Bank of Yamuna Flood Plain)	25 Acre (Approx.)	Laxmi Nagar	Total Non-Stay agriculture land was retrieved from encroachers
21	22.11.2019	DDA Land from Vikas Marg to Geeta Colony bridge (Eastern Bank of Yamuna Flood Plain)	50 Acre (Approx.)	Laxmi Nagar	Total Non-Stay agriculture land was retrieved from encroachers
22	29.11.2019	DDA Land from Vikas Marg to Geeta Colony bridge (Eastern Bank of Yamuna Flood Plain)	08 Acre (Approx.)	Laxmi Nagar	Total Non-Stay agriculture land was retrieved from encroachers

Sd/-

DY. Director (Hort.)

Hort. Div. -IX/DDA

Related to Chapter 3 – Quality of River Water

Discharge of Waste Water and BOD load/per day into river Yamuna at Delhi

Comparative data for the year 2017, 2018 and 2019

S.No	Name of Drain	Flow (MLD) 2017	Flow (MLD) 2018	Flow (MLD) 2019	BOD load (TPD) 2017	BOD load (TPD) 2018	BOD load (TPD) 2019
1.	Najafgarh Drain	2042.3	2066.7	1938.38	132.55	101.29	133.82
2.	Shahdara Drain	513.9	473.5	500.97	41.26	38.95	61.44
3.	Waste water input into abandoned Agra Canal	260	218	117.93	33.5	30.63	21.54
4	Barapulla Drain	136.3	151.2	151.77	10.3	9.06	10.46
5	Tuglakabad Drain	88.9	45.8	22.10	9.12	3.25	3.42
6	Delhi Gate (Power House) Drain	84.8	47.5	39.02	6.26	3.31	3.43
7	Sen Nursing Home Drain	64.4	41	31.53	9.45	5.29	4.69
8	Abu Fazal Drain	50.9	35	28.94	1.54	1.08	0.88
9	ISBT + Mori Gate Drain	45.2	51	37.94	2.89	3.06	2.67
10	Sarita Vihar Drain	40.8	26	35.68	9.9	6.02	7.73
11	Maharani Bagh Drain	26.5	24.2	30.16	3.03	2.43	3.51
12	Jaitpur Drain	16.6	23.3	19.58	2.28	3.39	3.07
13	Molar Bandh Drain	14	19	22.17	1.98	2.07	2.36
14	Kailash Nagar Drain	11.9	7.8	9	3.15	2.82	2.70
15	Tonga Stand	11.4	7.8	4.46	1.75	1.18	0.59

	Drain						
16	Shastri Park Drain	7.6	4.3	5.76	0.84	0.46	0.75
17	Drain No.14	7.3	4.3	6.54	0.13	0.05	0.07
18	Magazine Road Drain	7.1	6	4.32	0.54	0.44	0.30
19	Civil Mill Drain	6.3	8.6	11.14	0.5	0.57	0.67
20	Metcalf House Drain	6.1	4.3	3.45	0.2	0.12	0.11
21	Sweeper Colony Drain	6	6	5.4	0.16	0.18	0.10
22	Khyber Pass Drain	1.3	-	NF	0.03	-	NF
		3449.6	3271.3	3026.24	271.36	215.65	264.31

Related to Chapter – 4 : Sewage Treatment Plant

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003**

No. YPMC/2019/ 311

Dated: 25/9/19

Subject: Minutes of Meeting regarding timelines for construction of STP at Coronation.

With reference to the above subject a meeting was organized on 19.9.19 in view of the fact that a detailed technical report had indicated that there was no possibility of commissioning the Coronation STP by December, 2019 and not even by March, 2020. The CEO, DJB was asked through a memo dated 6.9.19 to review the position in terms of physical progress and brief the Monitoring Committee keeping in the mind all factors.

The meeting held on 19.9.19 was not attended by CEO DJB. Two new officers who had taken over recently as Chief Engineer and Superintending Engineer, Sh. M.K.Jain & Sh. B.P.Saraswat respectively attended. They came with no background of the timelines or reasons for repeated slippages. On the Electrical & Mechanical side the DJB was represented by Sh. S.C.Vashisht, Chief Engineer (E&M).

The Technical report prepared by DTU was taken up for review and Monitoring Committee wanted to know when the fact that adequate power supply for commissioning the 70 MGD STP at Coronation Pillar would not be available came to notice of the DJB. Second, when was the decision taken that only commissioning 50% of STP would be undertaken as power was not going to be made available? Also, when was the decision taken that the existing Old Coronation STP (with lower design standards) would continue to function to be able to take care of the entire sewage load of 70 MGD due to partial commissioning of new 70 MGD plant.

The MC was hampered by the fact that the two new officers were not aware of the position in respect of any of above questions which were legitimate questions after receiving the DTU's report.

Chief Engineer (E&M) Sh. Vashisht generally indicated that he took charge in March 2018 and came to know from TPDDL the need for establishing a separate substation which would take 10 to 12 months for execution and would be ready only by about June 2019. He stated that he had brought this fact to the notice of the Member (Drainage). However at no stage did the CEO, DJB or the Member (Drainage) bring to the notice of the MC that the timelines which had been repeatedly given to the MC and reflected in their reports to the NGT would not be achieved or that they will be only partially achieved. When the MC had reviewed the progress on 22.7.19 it was observed that no critical path was being followed to implement and monitor the progress of the project and that the project which was agreed to be commissioned in December 2018 was extended to June 2019 and then to December 2019. MC had therefore directed for an independent audit of the project. The report prepared by DTU is in pursuance of that decision of the MC. The report of DTU had been sent to CEO DJB for review on 6.9.19.

Today's meeting was infructuous because of the lack of preparedness and poor representation by key officers of DJB without any intimation to the MC. The following emerges:-

1. L&T only informed DJB electrical division of the power supply needed for commissioning the entire plant of 70 MGD in January 2018. Sh. Vashisht Chief Engineer (E&M) took the matter with TPDDL in March 2018 after he had taken over. Initially the TPDDL indicated that they would check availability of power from different sources but eventually in June 2018 they informed that a 6substation would have to be constructed. They would provide 3.5 MW power from the existing source and the remaining 3.5 MW would require construction of a substation. The process for construction of substation and commissioning will carry on till December 2019. The four digesters will be ready by March 2020 and another four by June2020.

2. It was only during the meeting that the MC was informed that it was proposed to actually use Old Coronation plant of 30 MGD capacity (despite the treatment parameters being below standard requirements stipulated by NGT). Further that the first of the four digesters would take a month to be filled which means that operation would start in April and filling four digesters would continue until July 2020. It is clear that the timelines that had been given to the MC and to the NGT had not clarified at any stage that there would be so much delay. All along the MC had been told that there was a slippage from June 2018 to December 2018, finally and it would be completed by March 2020. From the foregoing it is obvious that the monitoring of this by DJB is weak and no effort has been made to explain this to MC and an incorrect timeline had been conveyed to NGT.

The MC would like to know the name of the officer responsible for the subterfuge because if wrong timelines are conveyed to the MC the entire monitoring process becomes a charade. For the second time CEO DJB is asked to go through the Technical Committee's report and come to a conclusion about the timelines which will be adhered to and which will be conveyed in supplementary report to the NGT. Remaining 3.5 MW power will only be available upto September 2020. In any case, the delay will expose the DJB and its officers responsible for the delay to the consequences enumerated in the NGT's order dated 11.9.19.

The other related aspect is whether commissioning of the digester may be linked to sludge generated and transferred to the new digester for power generation which would eventually be used for running plant of 50% capacity. At the same time the sludge which is presently needed and is lying at the old plant could also be utilized for power generation and in turn would reduce pollution in the environment. This is a technical issue which CEO, DJB should take in view and if necessary commission an expert agency to opine. Since the technical report dated 09.8.19 had revealed the extent of slippages which are serious in nature, the schedule for up-gradation of 9 STPs and the timelines as indicated in the minutes of the meeting held on 22.7.19 also requires an independent technical audit about the work completed and the work

that remains to be completed and whether the timelines would be met. Accordingly, the DTU and Sh. R.S.Tyagi may give a report by 5.10.19.

Sd/-

Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-

B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To: CEO, DJB.

Copy to:

1. Member (Drainage), DJB.
2. Sh. M.K.Jain, Chief Engineer (Dr.) Pr-II.
3. Sh. S.C.Vashishth, Chief Engineer (SDW).
4. Sh. B.P.Saraswat, SE (Dr.) Pr – IV.
5. Sh. Anil Chaudhary, EE (C) DR-XI.
6. Sh. R.S.Tyagi, Expert Member
7. Sh. S.K.Singh, Professor D.T.U.

Address: Room No. 58, India International Centre

40, Max Mueller Marg, New Delhi – 110003

Telephone No: 011- 24609270

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Related to Chapter 4 – Sewage Treatment Plant

OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003

No. YPMC/2019/ 350

Dated: 7/11/19

Subject: Minutes of the meeting held by the Monitoring Committee on 21.10.2019 at 2.30 PM with the officials of the DJB and Irrigation and Flood Control Department for reviewing the Progress of various projects and Action Plans of Delhi Jal Board and IFCD.

The list of the officers who attended the meeting is enclosed.

At the outset, M.C. drew attention of the CEO DJB who also holds the charge of the Secretary (IFCD) and the officers present to the NGT's orders dated 11.9.19 wherein a slew of directions had been issued fixing timelines and milestones for setting up STPs, trapping sewage in the drains and levying of sewerage charges under the Polluter Pays Principle.

The MC reviewed the status of implementation of the directions of NGT, subject wise:

NGT's Directions:

"Sewage Treatment Plants:

- a. DJB has to give definite milestones and timelines to bridge the gap in terms of poor capacity initialization within one month.*
- b. The DJB to prepare an Action Plan with timelines for better capacity utilization of STPs by tapping the drain as a short term measure to reduce pollution in River Yamuna within one month.*
- c. DJB to prepare an action plan with specific timelines and implement the same in terms of bridging the capacity gap and upgradation of existing STPs that are functioning on old parameters.*

- d. *DJB to take concerted steps in terms of actions not taken so far and fix the accountability of erring officials.*
- e. *DJB to complete the task of setting up of STPs by 31.12.2020.*
- f. *The DJB needs to spell out action to be taken with specific timelines within one month.*
- g. *Bioremediation and/or phytoremediation or any other remediation measures may start as an interim measure positively from 01.01.2020, failing which the Govt. of NCT of Delhi may be liable to pay compensation of Rs. 5 Lakhs per month per drain to be deposited with the CPCB. This however, is not to be taken as an excuse to delay the installation of STPs, sewerage network and its connectivity. For delay of the work, the Chief Secretary, Govt. of NCT Delhi must identify the officers responsible and assign specific accountability. Wherever there are violations, adverse entries in the ACRs must be made in respect of such identified officers for delay in setting up of STPs, sewerage network and its connectivity by the concerned head of the department.*
- h. *The Govt. of NCT, Delhi will be liable to pay Environment Compensation if defaults take place as under:*
 - i. *The operational deficiencies of the existing STPs must be rectified within three months failing which Environmental compensation of Rs. 5 Lacs per month for STP shall be deposited with CPCB.*
 - ii. *With regard to works under construction, after 01.07.2020, direction for payment of environmental compensation of Rs. 10 lakhs per month to CPCB for discharging untreated sewage in any drain connected to river Yamuna and Rs. 10 lakhs per month to CPCB per incomplete STP, sewerage network and its connectivity will apply.*
 - iii. *With regard to the situation where works with regard to STP, sewerage network and its connectivity have not yet started, the Govt. of NCT, Delhi has to pay an Environmental Compensation at the rate of Rs. 10 lakhs per month per STP, Sewerage network and its connectivity after 31.12.2020 for the delay in setting up of the same. It will be open to Govt. of NCT of Delhi to recover the said amount from erring officers/contractors.*

Setting Up/Upgradation of STPs;

Status of Implementation: As per the NGT's direction all the STPs under construction should be commissioned by 31.12.20 and the work on all the new STPs that are proposed to be set up should commence before 01.01.20 failing which all the drains should be taken up for in-situ treatment through bioremediation/phytoremediation. The DJB has also been directed to prepare Action Plan for better capacity utilization, bridging the gap between sewage generated and sewage treated and up-gradation

of the existing STPs not meeting the revised standards with milestones and timelines and submitted to the NGT. The CEO DJB informed that the STPs under construction/upgradation are those at Rithala (20 MGD), Kondli (45 MGD), Okhla(140 MGD) and Coronation Pillar (70 MGD). The target dates for commissioning as per the report of DJB are:

1. Coronation Pillar(70 MGD): June 2020
2. Rithala(20 MGD): December 2020
3. Kondli(45 MGD): July 2022
4. Okhla(140 MGD): December 2022

On the issue of commissioning all the STPs by 31.12.20 as directed by NGT, CEO DJB submitted that since the scheduled dates of commissioning of STPs and other Sewerage related projects are a part of the contractual agreements between the DJB and the Concessionaire, it will not be possible to advance the date of commissioning of these STPs.

The NGT had directed that in the event of the work of setting up new STPs not commencing by 01.01.20, the sewage in the drains should be treated through In situ remediation/ phytoremediation. CEO stated that while target dates for some STPs are under contractual agreements other STPs, proposed to be set up under the SMP 2031 in a decentralized way, are getting delayed due to non- availability of land. Despite matter having been taken up with the Divisional Commissioner, there has been little progress. Also the in situ treatment in drains will have to be taken by the drain owning agencies. CEO informed that they have written to the respective drain owning agencies to take up initiatives for treatment of waste water flowing in their drains before it reaches to River.

MC's directions:

- i. The target dates of commissioning of the new STPs are as per the NGT's order and it is for the DJB to seek amendments to the orders of NGT if it wants the dates changed and the timelines relaxed. The MC will have to monitor the progress with respect to the orders of the NGT. The fact that this advice was given to DJB will be recorded in the forthcoming report of MC.
- ii. DJB should assign responsibilities for completion of the Projects as per the timelines considering that NGT has given specific directions on this and the CS has been directed to fix accountability for adherence to the timelines.

- iii. The MC informed the DJB both in earlier communications and during the meeting that the timelines stretching over 2 to 3 years have no utility from the point of view of monitoring as no mid-course corrective action/management intervention can be made. The MC therefore directed for the second time that DJB should submit six monthly milestones so that the MC can monitor the progress accordingly.
- iv. On in-situ remediation in drains the MC finds the effort to parcel the bioremediation responsibility to a host of drain owning agencies having no clue about such strategies unsupportable. It is for DJB as the authority responsible under law for management of sewage and Irrigation & Flood Control Department (which is working under the same officer) and has in the past given numerous plans for in situ aeration, ozonation to the MC to find a way of implementing the NGT orders. If it requires that matters be resolved by the State Government, it is for the CEO DJB and Secretary I& FCD to obtain Government orders. Since the NGT has cast the responsibility for implementing its orders on the CS, the CEO DJB may bring it to the notice of the Chief Secretary along with MC's views thereon.

Capacity Utilization:

The DJB submitted a statement giving the milestones and timelines on additional sewage treatment capacity proposed to be created and the capacity utilization vis a vis the installed capacity as furnished by the DJB are as tabulated below:

S.No	Description	July-19	Dec-19	June-20	Dec-20	Dec-21	Dec-22	Remarks
1	Sewage generated in Delhi as per water supply (mgd) i.e.900 MGD	720	720	720	720	720	720	As per CPHEEO Manual, sewage generated is 80% total water supply of 900 MGD.
2	Installed Sewage treatment capacity (mgd)	597	597*	637**	637	657#	707##	* The capacity reduced from 617 to 567 mgd due to shut down of 20 mgd unit at Rithala taken up for rehabilitation. ** After

								commissioning of Coronation Pillar STP (70 MGD) # After rehabilitation of Rithala STP (40 MGD) ## After commissioning of Okhla STP (140 MGD) & Rehab. Of Kondli STP (10+ 10+ 25 = 45 MGD)
3	Capacity utilization (% age)	83.75	90.45	93.0	95.3	96.2	100*	Capacity Utilization of some of the STPs like Ghitorni, Kapashera, VasantKunj, Mehrauli, Najafgarh, Narela is low as development of the area has not taken place as planned. Design period of STP is 30 yrs. *The Existing plants can treat excess flow upto 5-10% of installed capacity.

Short-term measures for enhancing capacity utilization:

In the meeting held on 22.7.19 it was decided that DJB will take short- term measures for better capacity utilization of underutilized STPs at Narela, Rohini, Kapashera, Nilothi, Najafgarh and Yamuna Vihar. C.E., DJB informed that for capacity utilization of Rohini, they are diverting flow from Rithala STP to Rohini STP. Rohini STP is working at 5 MGD and additional 10 MGD will be diverted from Rithala STP

to make it functional at 15 MGD. The work will be completed by June 2020. The Expert Advisor informed that Rithala-I is already running at 50% of its capacity. Diversion of sewage will further reduce flow at Rithala STP. DJB must ensure that by diverting sewage from one plant to another it should not lead to underutilization of STP at Rithala-I. At Narela STP, a weir is being constructed for diverting the sewage flowing in Drain D-6. The work will be completed by September 2020. The M.C. asked DJB to compress the timelines and complete the work by June 2020. The capacity utilization of Najafgarh will be enhanced with the trapping of Dharampura drain which is expected to be completed by 31.12.19. The capacity utilization of Nilothi and Yamuna Vihar will increase to 100% with the commissioning of ISP by 31.12.19. MC noted with regret that despite DJB's assurance in the meeting on 22.7.19 some of the timelines have been exceeded and are going beyond 31.12.19. The Member (Drainage) however informed that once the action plan prepared by DJB is implemented most of the STPs will work to full capacity.

MC's Directions;

- i. MC directed that the timelines in the action Plan should be adhered strictly and in no case should the short term measures for capacity enhancement go beyond June 2020. A report on the progress made by 31.12.19 should be submitted to MC for inclusion in its next report to the NGT.
- ii. The Member (SC) asked Delhi Jal Board to examine if the system of awarding the work through GEMS Platform evolved by Ministry of Commerce, GOI can be used to shorten the time required for completing the entire process of selecting consultants, preparation of DPRs, issue of RFPs/ NITs, award of tenders and execution of work. This would cut red tape and long delays that are affecting award of projects and oversight of execution is weak. The CEO, DJB promised to look into this and examine if the work of STPS, Sewerage Network being executed by the DJB is amenable to GEMS protocol and to inform the MC. The MC would include the response with suggestions in its forthcoming reports to NGT.

2. Interceptor Sewer Project:

NGT's Directions:

- a. *DJB to put the systems in place for project monitoring so that timelines are adhered to.*

- b. *DJB is directed to adhere to the timelines with regard to ISP and treat all the 242 MGD sewage by 31.12.2019.*

For failure to comply with the above directions compensation will be payable at the rate of Rs. 5 Lakhs per month till compliance from 01.01.2020. Entries be also made in the service records of the erring officers to fix their responsibility.

Status of Implementation:

The revised target date for completion of the project is 31.12.19. The CEO confirmed that the DJB is committed to commissioning the project by that date. With the commissioning of ISP, 242 MGD of sewage is expected to be trapped and treated. On enquiry by the MC whether 242 MGD is the volume to be trapped at the planning stage or is the actual volume that the project will trap and treat the Member (Drainage) clarified that 242 MGD is the volume that was planned to be trapped. However with population increase and mushrooming of unauthorized colonies over the years, there is likely to be change in the total volume expected to be trapped through the ISP. This exercise is underway and DJB with the assistance of EIL , the Project Consultants, will be able to make an assessment of this. The Deputy General Manager, EIL present in the meeting informed that they have engaged two agencies for measurement of flow in each drain being trapped. From first week of November 2019 re-measurement of flow in all 108 drains being trapped will start. He also confirmed that only 20-30 drains are such in which flow may be at variance with what was measured at the time of planning and that all the other drains are likely to have the same flow as was present at the time of planning. MC found the reply of a professional organization like the EIL vague and directed that the volume of sewage that would be trapped should be measured and reported to the MC.

The Member (Drainage) further confirmed that since some of the STPs under package 3 and 4 of the project will be commissioned/upgraded only by December 20, the trapped sewage under ISP will be treated at the existing STPs. These existing STPs, however, conform to old standards of treatment.

MC's Directions.

- i. The flow that is likely to trapped on commissioning of ISP should be measured afresh by the DJB through EIL and informed to the MC before 15.12.19 and the ISP commissioned by 31.12.19.

- ii. CEO DJB to take up the issue at the level of Chairman EIL to take this project seriously. DJB as the agency cannot rely on outdated data that and must provide credible and technically authenticated figures of sewage trapped and managed under the ISP.

Status of 204 Drains excluded from ISP Project.

On the issue of the 204 drains which have been left out from coverage under ISP or have emerged after the ISP was planned, CEO informed that an action plan has been prepared and submitted to the MC. All these drains will be connected with the existing system for trapping sewage from unauthorized colonies. As per the Action Plan, 21 drains have already been trapped, 71 drains are expected to be trapped by 2019, 7 drains by 2020 and the balance 11 by 2021 and no action on 94 drains is required.

MC's Directions:

MC Members while taking note of the submissions made by the DJB directed that any delay beyond 31.12.19 would invite action as spelt out in the NGT's order dated 11.9.19.

Maintenance and Trapping of Drains:

NGT Directions:

The DJB and NDMC to identify and plug the sources of sewage within two months positively and report compliance to Monitoring Committee.

- i. *Qudasia bagh+ Mori Gate drain(Flow: 43.2 MLD):DJB to make an assessment of sewage coming from sewerred areas and prepare an action plan with timelines for plugging the discharge into storm water. New STPs be established only for non-sewerred areas.*
- ii. *Barapulla Drain (Flow: 145.15 MLD): DJB to submit action taken on Action Plan which it had submitted to NGT in 2014 in terms of actions on short term, medium term and long terms measures envisaged.*
- iii. *Maharani Bagh Drain (30.24 MID): DJB to indicate proposal to stop the flow in the drain with specific timelines in terms of tapping or laying of sewer lines in un-authorized colonies.*

- iv. *Najafgarh drain (2056 MLD) and Shahdara outfall drain (475 MID): The DJB is directed to attend to the observation of Monitoring Committee so that all the intercepted sewage is treated. The States of Haryana and UP are directed to submit their Action Plan with specific timeline to attend the flow of untreated sewage into said drains.*
- v. *Status of other storm water drains carrying sewage: The DJB is directed to submit a specific timelines with specific accountability so that no sewage finds its ways from sewerage areas into the storm water drain.*
- vi. *Status of Punctured Sewers: DJB to ensure that such instances are attended on priority with specific accountability.*
- vii. *For failures in tapping the drains, environmental compensation at the rate of Rs. 5 lakh per drain per month will be paid by the DJB or concerned department to the CPCB for environmental restoration. Entries in the record of the erring officers also be recorded consistent with the earlier directions.*

Status of Implementation:

The NGT's judgment dated 13.1.15 and orders thereafter categorized the pollution abatement work in two phases. Phase I covered Najafgarh and Shahdara drains which accounted for about 2/3rd of the pollution in river Yamuna. Phase II covered other drains which convey sewage to river Yamuna. Najafgarh and Shahdara drains are covered under the ISP.

Najafgarh(2056 MLD) and Shahdara(475 MLD) drains: As per the data on monitoring of drains submitted by CPCB, Najafgarh drain carries 2056 MLD and Shahdara drain 475 MLD of sewage into river Yamuna. However Najafgarh drain receives 450 MGD of sewage from Haryana and Shahdara drain receives 50 MGD from Ghaziabad/Sahibabad in UP. The DJB representatives pointed out that action for control of pollution in Najafgarh and Shahdara drains contributed by the Haryana and UP states will have to be pursued with these two states and unless the sewage flowing in from these two states is treated, all efforts made within Delhi will not reduce pollution in river Yamuna. Further, river Yamuna in the Delhi stretch also receives sewage and industrial effluent through DD-6, DD-2 and Dhanaura escape upstream of Wazirabad. MC will separately monitor this with Haryana and UP with reference to the directions of NGT.

Delhi Jal Board informed that the current status of trapping of 11 plus 6 drains has been submitted to the M.C. As per the status report, all the 11 drains except Barapulla drain, Qudsia Bagh + Mori Gate drain and Maharani Bagh drain have been fully trapped.

i. **Morigate +Kudesiabagh drain (Flow: 43.2 MLD)**

In the review meeting on 22.7.19, MC was informed that most of the areas in the catchment of Morigate drain + Kudesiabagh drain were sewerred and therefore the MC asked the DJB to plug sources of sewage coming from sewerred areas in Chandni Chowk and only after that is done should DJB consider setting up STP at the outfall point.

Member (Dr), DJB explained that as per the direction of M.C., a survey was conducted to trap the sewage at source to reduce flow in Mori Gate drain. However, it was found that the capacity of Ring Road Trunk sewer and Ring Road pumping station is not adequate to take additional discharge. Hence, additional decentralized STP is to be essentially set up at Mori gate itself for which DDA has been asked to allot the land. Despite matter having been pursued with DDA allotment of land is yet to be made.

ii. **Barapulla Drain (Flow: 145.15 MLD)**

On Barapulla drain, DJB informed that the Board is already working on the Action Plan submitted to M.C. The M.C. asked the DJB and the Expert Advisor to make an assessment of sewage in the Barapulla drain once the sewage in Kushak drain is trapped as per the Action Plan and the sewage in Sunehribagh drain from the NDMC areas is stopped by the NDMC. Only thereafter should the DJB consider setting up STP for the residual flow. The MC has also separately asked the DJB in the meeting held on 25.9.19 followed by field inspection on 27.9.19 to undertake a survey of all the point sources of sewage flowing into Kushak drain/Chirag Delhi drain so that effectiveness of the Action Plan of Delhi Jal Board can be measured with reference to stoppage of sewage in the drain.

The M.C. in its meeting on 25.9.19 had also asked the NDMC, DJB and Expert Adviser Shri Tyagi to make an assessment of the point sources of sewage in Sunehri Bagh drain flowing through the NDMC areas so that NDMC could be asked to take preventive action on flow of sewage. The Expert Advisor informed that he has visited various points in NDMC area wherefrom sewage is being discharged into drain which is ultimately discharged into Sunheri

Bagh drain. The team is in the process of measurement of flow at various locations as directed by the M.C. However, DJB must ensure that if NDMC connects the sewer line into existing 66" barrel near Dayal Singh College, the capacity of connected SPS at Pragati Vihar Hostel is adequate to cater to the additional discharge of NDMC area. DJB confirmed about adequacy of the capacity of Pragati Vihar SPS.

Maharani Bagh Drain(Flow: 30.24 MLD): About 2 MGD (9 MLD) of sewage is expected to be trapped by 31.12.19. However the balance 4.5 MGD (21.24 MLD) of sewage is expected to be trapped only after sewerage network in Batla House Group of colonies is completed. The MC asked the DJB to examine if the sewage can be trapped through peripheral sewer and conveyed to some STP as an interim measure till the sewer lines are laid.

Other Drains having direct Outfall in Yamuna :

There are other drains, namely, Sonia Vihar, Shastri Park drain, Kailash Nagar drain, Abu Fazal drain, JaitPur drain and Tughlakabad drain which have direct outfall in river Yamuna. The report on the Action Plan for these drains is still awaited. DJB was asked to submit action plan for trapping sewage in these drains.

Plugging of Sewer lines connected to Storm Water Drains:

There were 79 locations where sewer lines had been punctured and connected to storm water drains. DJB informed that 40 such locations have already been plugged. Another eight locations will be plugged by 31.12.19, 22 locations by 30.6.20 and four locations by 31.12.20. Five locations are the responsibility of DUSIB, Railway, DDA and CPWD and the matter will have to be taken with those authorities.

MC's Directions:

- i. The M.C. directed that the DTU team should inspect all the 11+6 drains and confirm the status of trapping with respect to the claims of DJB.
- ii. DJB was directed to furnish the details of the steps taken by the Board to get the land allotted by the DDA. If required the DJB should consider moving NGT for issue of appropriate directions to DDA for expediting land allotment as the matter has

been hanging fire for quite some time. This is all the more necessary as the NGT has set certain deadlines for setting up STPs in its order dated 11.9.19.

- iii. As already directed DJB should carry out survey of all the point sources of sewage in Kushak drain which is a tributary drain of Barapula drain and implement the short, medium and long term measures identified Action Plan within the timelines given in the Plan. A status report should be filed within one month for inclusion in the next report of the MC.
- iv. DJB should also pursue the matter with NDMC for plugging all the sewage in Suneharibagh drain coming from NDMC areas after the point sources are identified by the Committee of Expert Adviser, NDMC and DJB.
- v. Other drains which have a direct outfall into the river Yamuna are also to be monitored with respect to the flow of sewage and measures taken for trapping sewage in these drains. These need to be tabled along with an action plan to trap the sewage and divert it for sewage treatment.
- vi. The status of plugging the punctured sewers should be reported for inclusion in the next report of MC.

Sewage Management in Unauthorized colonies:

NGT's Directions :

Sewage and Faecal Sludge Management and Levy of Environmental Compensation:

- a) *An incremental progress of collecting 2 MGD of Septage in 120 days needs to be quantified by DJB in terms of the number of households with pit latrines, map the SPS' where the collected Septage has to be deposited colony wise and sub-district wise and monitor licenses issued at a disaggregated level. DJB to assign responsibility to an organization which can collect and furnish incremental progress.*
- b) *DJB may prepare an Action Plan for providing unauthorized colonies with sewerage systems.*
- c) *Govt. of NCT Delhi, DJB, DMCs and DDA to collectively undertake advance planning for location of STPs, SPS', peripheral and trunk lines before new populations settle in.*

- d) *Chief Secretary, Govt. of NCT Delhi make it mandatory for those provided with piped water supply and those having a sewage conveyance system in the vicinity to take sewer connections.*
- e) *Chief Secretary, Govt. of NCT Delhi, DJB and DMCs to introduce the regime of levy sewerage charges as presently no such charges are being levied within two months including areas where network has been laid (whole of East Delhi).*
- f) *Considering that tens of thousands of households spew their garbage into the storm water drains and pay nothing for the environmental damage caused, the CEO, DJB and DMCs to ensure sewer connectivity where sewer network has been laid before 31.12.2019 failing which both these agencies shall be saddled with environment compensation to the tune of Rs. 10 lakh per month and disciplinary action against the Zonal Officer responsible for his zone.*
- g) *The Chief Secretary, GNCT Delhi, DJB and DMCs to ensure that a mechanism is evolved where by raw sewage from unauthorized colonies gets collected and taken to some central STP facility for treatment till the time sewer line network is laid in unauthorized colonies within three months and six months thereafter ensure implementation of laying of sewer line network failing which Environmental Compensation of Rs. 10 lacs per month shall be levied on each of them.*
- h) *An institutional mechanism be established by the Chief Secretaries, GNCT Delhi, DJB and DMCs whereby the collection, transportation and disposal of septic tank waste is monitored.*
- i) *Accountability of the officers may be determined in the manner mentioned earlier. The Committee may monitor this aspect."*

CEO stated that there are 1799 unauthorized colonies and sanitation, solid waste management and prevention of sewage going into drains is the responsibility of the Municipal Corporations. The DSIIDC and IFCD have been given the responsibility of creating road and drains network in unauthorized colonies by the Urban Development Department of GNCT. In unsewered colonies the DJB does not have the enforcement powers to prevent sewage and Septage being discharged into the drains and that it is the MCDs which have the powers under

Section 42 and 355 of the DMC Act of 1957. The DJB's responsibility is to lay the sewerage network and only after that does the sewage and septage is handled by the DJB. Member (Dr), DJB informed that earlier 567 unauthorized colonies which were regularized in 1982-83, where the sewerage system is already laid. The status of providing sewerage network in the unauthorized colonies is as under:

- I. Sewerage system laid and notified: 436 colonies.
- II. Sewerage system being laid and to be completed by 2022: 540 colonies.
- III. Tenders invited and work likely to be completed by 2023: 116 colonies.
- IV. NOC awaited for colonies falling in "O" Zone or on forest land: 96 colonies.
- V. Colonies where sewerage system is not yet planned: 611 colonies

CEO, DJB informed that the number of unauthorized colonies have more or less got stabilized at about 1799 during the last one and a half year. DJB plans to provide sewerage facilities in most of the unauthorized colonies by 2023. Since the mushrooming of colonies and jhuggis is quite rampant and DJB has no control on such colonies the only credible way of preventing pollution of river is to intercept sewage at the outfall point of the drains. The MC also emphasized the point that priority should be to prevent sewage and industrial effluent going into the river and therefore as a short term measure the DJB should consider intercepting the sewage flowing from all the unauthorized colonies through peripheral sewers pending a sewer network provided in all the colonies. The DJB informed that the same concept has been adopted in setting up of 9 plus 5 STPs in Najafgarh area in which only peripheral sewer lines, SPSs and STPs were proposed. But due to non-availability of land and mismatch of funds from Ministry of Water Resources, the project could not be taken up so far.

There are some colonies where sewerage system has been laid but residents have not taken sewer connections. There are in all 2.3 lac households that have water connections, but not taken sewer connections. Delhi Jal Board has already issued notices to 50000 of them and action is being taken including disconnection of their water supply, under the powers under the Delhi Water Board Act-1998 Remaining households will be issued notices within next three months. MC asked for a status report of action taken between the review meeting and the last

week of December 2019 which would be reported to NGT in the January report. The MC would not be able to refer to an open -ended “ 3 month” period as NGT’s orders are specific and the Tribunal will not accept stretching the time for implementation.

Director (Revenue), DJB informed that by December 2019, 1.29 lac consumers will be issued bills for all the households within the notified sewerage colonies, which will include sewage charges whether they have taken sewer connections or not. On enquiry by the M.C., it was informed that percentage of default in payment of water bill at present is more than 40%.

The MC asked DJB to submit their written submission in this regard within a week’s time.

CEO DJB also informed that the Board also plans to issue press note asking people to take sewer connections or else face disconnection of water supply.

MC while taking note of the initiative taken by the Board also asked the Board to implement the decision of NGT (which has since been confirmed by the Hon’ble Supreme Court vide its order dated 24.10.19) mandating each household, irrespective of whether the consumption is more or less than 20 KL of water per month to pay sewerage charges under the “Polluter Pays principle” and whether the household is located within the notified sewerage colony or unsewered colony. The MC also reminded the CEO, DJB that the GNCTD Cabinet had decided to impose sewerage charges on each household regardless of whether the household is in sewerage areas or unsewered areas and irrespective of the quantum of water consumed. The MC will separately ask the Urban Development Department to provide oversight so that there are no obstacles in getting compliance. The NGT has asked the MC to submit its next report in January 2020 and the MC expects the GNCTD to have the orders implemented by 15th December. The matter has been brought to the notice of the Principal Secretary Urban Development and the Chief Secretary also by the MC in meetings and issue of minutes.

MC’s Directions:

- i. The data collection colony wise and household wise has to be collected directly or indirectly which should have been done months ago. The Member Drainage had come to MC’s office several months ago and given assurances that this was being got done. DJB has been asked by NGT to have a segment by segment Plan made to trap the

sewage generated in all the unauthorized colonies, its interception conveyance and treatment pending creation of sewer network and individual household connectivity. A Plan for this be submitted to the MC before 31.12.19.

- ii. Progress on action against those who are in sewerred areas but have not taken sewer connections should be reported to MC by 31.12.19.
- iii. Progress on implementation of NGT's order on every household being asked to pay sewerage charges as per NGT's order and confirmed by the Hon'ble Supreme Court be submitted for incorporating in MC report to NGT which has to be done by 31st December. MC expects that interim progress reports be furnished between the issue of these minutes and 31st December.

Septage Handling Issues involving Inter -Agency Co-ordination.

DJB at present is collecting around 5-6 lac of septage per day which the MC finds abysmally low in comparison to the septage generated. The Board is issuing licenses to everyone who applies for a license under the Septage Regulations.

M.C. had asked the DJB and the Divisional Commissioner to coordinate effective enforcement of the Septage Regulations through the District Magistrates. CEO DJB informed that sanitation in unsewered areas is the responsibility of the DMCs under the Section 42 and 355 of the DMC act of 1957. As per DMC Act, solid waste management has to be done by Delhi Municipal Corporations and therefore collection of data on septic tanks, pit latrines and related issues till sewerage system is laid by DJB is also the responsibility of the DMCs. Regarding taking action against defaulters, CEO DJB informed that only D.M. and Delhi Police have the authority to seize the unlicensed vehicle engaged in septage handling.

Though the DJB has taken up this issue with District Magistrates, however, their response is lukewarm. The CEO was told that his interpretation has to be resolved by the Department of Urban Development and until that happens MC will go by the Regulations dated 21.11.18 which make DJB- the stated protagonist.

Response to Outsourcing Sewage Collection.

The M.C. wanted to know from DJB whether the Board has considered the proposal of engaging a private agency which can be made responsible for collection of sewage from individual house of planned or unplanned colonies on payment of collection charges, and convey it to the sewage pumping stations and thereafter to the STPs finally to treatment plants and treatment of sewage including final disposal as treated waste water based on the pattern of private power distribution companies-DISCOMS, rather than having to deal with individual emptiers. With collection charges levied on each household having septic tanks a business model needs to be thought of but viability of such a model will depend upon strict enforcement of Septage Regulations 2018 and levying of EC or action taken under DMC Act to ensure compliance. M.C. quoted the example of Nagpur and New Mumbai where sewage is purchased and treated waste water is being sold to industries. The CEO was asked to understand the different models and consider and report on options suitable in Delhi colonies.

Use of treated waste water:

NGT's directions:

DJB and the park owning societies like DDA, DMCs, PWD to mandatorily use the treated water from STPs for all parks within 5 km radius of STPs and pending laying of pipelines. Such treated water to be transported through tankers. Compliance be reported by 31.12.2019 failing which DJB, DDA, DMCs, PWD and others shall each be charged Environmental Compensation at the rate of Rs. 5 lakh per month till compliance is reported. This shall be overseen by the Chief Secretary, Govt. of NCT, Delhi and the Monitoring Committee as this colossal waste of treated water cannot be allowed

Implementation Status:

Member Dr stated that the Board has released advertisement in the paper to all the park owning agencies to take treated waste water from their STPs by tankers pending laying of pipeline. However the response has not been very encouraging.

MC's Directions:

MC has already issued directions to all the park owning agencies to use only treated waste water within 5 Km radius of the STPs. With NGT's direction for implantation of this direction by 31.12.19 the DJB should use the powers given to it under the notification of 2010. NGT's direction for compliance by 31.12.19 be also be used to enforce compliance failing which action as per NGT's order be taken. The MC would need district/ zone/ ward wise details of parks and large green spaces and action taken by DJB to insist on compliance. Minutes of meetings held and instructions issued would not constitute progress and it is high time this was reported in terms of use of treated waste water by agency, by quantity supplied and action taken to seal bore-wells and provide treated water in lieu. This has to be provided by location and by agency along with quantum of such water supplied over and above what prevailed on 1.1.19.

Department of Irrigation & Flood Control:

- i. Ameliorative measures for cleaning drains & Constructed Wetlands and In-situ Bioremediation Technology: The Irrigation and Flood Control Department to develop a mechanism of third party verification report on the ameliorative measures undertaken by it. ☐*
- ii. Controlled Dredging in River Yamuna: The finding of the study undertaken by NEERI to assess slug deposition on river bed of Yamuna be evaluated and appropriate decisions by undertaken by IFCD (The Irrigation and Flood Control Department). ☐*

MC drew attention of Secretary IFCD to the Departments proposal to undertake in situ remediation in 27 drains belonging to the Department. Some DPRs were also prepared and some timelines with budgetary outlays provided by the Department were also furnished to the MC which the MC incorporated in its Report submitted to the NGT. MC wanted to know the present status of the projects. Secretary IFCD informed that:

- i. For In-situ Remediation of drains consultant has been appointed and feasibility report will be submitted by 31st October 2019. Only after the report will the IFCD take a*

decision on whether to proceed with in situ remediation work in these drains or not. Since the drains carry huge volume of waste water, there is, as of now, very little scientific experience of in situ treatment in the drains. Besides the requirement of land adjacent to the drains may be another constraint.

- ii. On dredging of River Yamuna being undertaken in collaboration with NEERI, it was informed that the pre-monsoon and post monsoon samples from River Yamuna have already been lifted and report will be submitted by 31st October 2019.

MC's Directions:

- i. MC directed that the MC be apprised of the decision taken by IFCD once the feasibility report on all the 27 drains proposed for in situ phyto remediation is received and a decision taken.
- ii. The Effectiveness report of the floating booms set up by the Department to trap floating waste in the drains be also submitted along with report the total quantities collected, the manner of its disposal.
- iii. Secretary I&FC was also directed to identify the hot spots of dumping of debris and C&D waste and submit to DMCs for enforcement action.
- iv. Report on Dredging once received from NEERI be submitted by 15.12.19.

Complaint of RWA Kalindi Colony:

M.C. informed that it has received a complaint from RWA of Kalindi Colony that sewage is coming into the existing water body of Kalindi Kunj which was supposed to be redeveloped by DDA. But due to inflow of sewage from surrounding areas, the work could not be taken up. C.E.(South), DJB informed that he had not received such complaint from the RWA. M.C. asked CE(S) to take the copy of the complaint received by the Board and visit the site independently and advise what is need to be done for resolving their problem? MC may also undertake a visit to the site.

Outcome report on Yamuna River Quality:

M.C. asked CEO Delhi Jal Board who also holds the charge of Secretary IFCD to submit a road map on the anticipated outcome of improvement in river quality due to the works done/projects implemented or works that are proposed to be undertaken during the next three to five years for bringing it the notice of the NGT in the next report of MC.

Sd/-

Shailaja Chandra
Member,
Monitoring Committee for Yamuna

Sd/-

B.S. Sajwan
Member,
Monitoring Committee for Yamuna

To:

1. CEO. DJB.
2. Secretary (I&FCD).
3. Member (Dr.), DJB.

Copy to:

1. OSD to CS, Delhi.
2. Secretary (UD).
3. Divisional Commissioner.
4. Commissioner East DMC.
5. Commissioner South DMC.
6. Commissioner North DMC.

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
Telephone No: 011- 24609270

Related to Chapter – 4 : Sewage Treatment Plant

6 Monthly Mile Stones for Civil & E&M Works For Phase I						
Name of Works: Rehabilitation And Upgradation Of Kondli Phase I (45.5 MLD), Phase II (113.7 MLD) And Phase III (45.5 MLD) Waste Water Treatment Plants (WWTPs) With Effluent Standards Of BOD 10 mg / L, TSS 10 mg / L Or Better Under YAP (III) Package K3.						
Agency: M/s Triveni - GSJ - Gharpure JV						
Cost of Work: Rs. 97.21 Cr						
Sl. NO.	Structure Details	Weightage (% Age)	Progress Upto Jun 20	Progress Upto Dec 20	Progress Upto Jun 21	Remarks
1	Inlet Works	6.91%	1.73%	Complete	-	Trees hindrance, cutting permission / Transplantation of trees expected by 31.03.2020
2	Primary Settling Tanks	3.24%	Complete	-	-	Rehabilitation works are in progress.
3	Aeration Tank	25.69%	14.13%	21.84%	Complete	Raft cast on 50% available front. Trees cutting permission / Transplantation of trees expected by 31.03.2020
4	Secondary Settling Tanks	10.98%	9.34%	Complete	-	Raft cast on 60% available front. Trees cutting permission / Transplantation of Trees expected by 31.03.2020
5	Tertiary / Filtration	13.23%	3.97%	9.93%	Complete	Raft cast on 50% available front of CCT. Trees cutting permission / Transplantation of trees expected by 31.03.2020

6	Digesters	20.03%	6.01%	15.02%	Complete	Trees cutting permission / Transplantation of trees expected by 31.03.2020
7	Centrifuge / Sludge Drying Beds	3.76%	1.13%	2.82%	Complete	
8	Gas Holder	3.65%	2.19%	Complete	-	Raft PCC on 90% (01 no only) available front. 01 no. front not available Trees cutting permission / Transplantation of trees expected by 31.03.2020
9	Miscellaneous	12.51%	5.00%	8.76%	Complete	Footings cast in Admin. Building. Trees hindrance in porch area Trees cutting permission / transplantation of trees expected by 31.03.2020
Grand Total Phase I		100.00%	43.49%	58.36%	100.00%	

Reasons for delay: .

1. Delay in Permission for trees cutting/transplantation
- 2 . EPCA Ban on construction Activities

Related to Chapter – 4 : Sewage Treatment Plant

6 Monthly Mile Stones for Civil & E&M Works For Phase II								
Name of Works: Rehabilitation And Upgradation Of Kondli Phase I (45.5 MLD), Phase II (113.7 MLD) And Phase III (45.5 MLD) Waste Water Treatment Plants (WWTPs) With Effluent Standards Of BOD 10 mg / L, TSS 10 mg / L Or Better Under YAP (III) Package K3.								
Agency: M/s Triveni - GSJ - Gharpure JV								
Cost of Work: Rs. 146.20 Cr								
Sl. NO.	Structure Details	Total	Progress Upto Jun 20	Progress Upto Dec 20	Progress Upto Jun 21	Progress Upto Dec 21	Progress Upto July 22	Remarks
1	Inlet Works	8.73%				4.37%	Complete	Phase II will be under interim O & M, till Phase I and III are constructed & commissioned Trees cutting permission / transplanti on of trees expected by 31.03.2021
2	Primary Settling Tanks	2.17%				0.72%	Complete	
3	Aeration Tank	28.51%				12.83%	Complete	
4	Secondary Settling Tanks	13.65%				4.55%	Complete	
5	Tertiary / Filtration	17.90%				8.95%	Complete	
6	Digesters	14.67%				2.93%	Complete	
7	Centrifuge / Sludge Drying	6.24%				2.50%	Complete	

	Beds				
8	Gas Holder	1.58%		0.53%	Complete
9	Miscellaneous	6.56%		2.62%	Complete
Grand Total Phase II		100.00%		39.99%	100.00%

Related to Chapter – 4 : Sewage Treatment Plant

6 Monthly Mile Stones for Civil & E&M Works For Phase III						
Name of Works: Rehabilitation And Upgradation Of Kondli Phase I (45.5 MLD), Phase II (113.7 MLD) And Phase III (45.5 MLD) Waste Water Treatment Plants (WWTPs) With Effluent Standards Of BOD 10 mg / L, TSS 10 mg / L Or Better Under YAP (III) Package K3.						
Agency: M/s Triveni - GSJ - Gharpure JV						
Cost of Work: Rs. 71.29 Cr						
Sl. NO.	Structure Details	Total	Progress Upto Jun 20	Progress Upto Dec 20	Progress Upto Jun 21	Remarks
1	Inlet Works					To be taken up in Phase II
2	Primary Settling Tanks	3.79%	Complete	-	-	Rehabilitation works are going on
3	Aeration Tank	43.19%	32.39%	38.87%	Complete	Raft cast on 60% front available Trees cutting permission / Transplantation of trees expected by 31.03.2020
4	Secondary Settling Tanks	12.43%	9.32%	Complete	-	New 01 no. FST completed Rehabilitation works are going on in balance 02 nos. FSTs
5	Tertiary /					To be taken up in

	Filtration					Phase II
6	Digesters	12.83%	4.28%	8.55%	Complete	Out of 05 nos. Digesters, 03 nos. will be rehabilitated in Phase II
7	Centrifuge / Sludge Drying Beds					To be taken up in Phase II
8	Gas Holder					To be taken up in Phase II
9	Miscellaneous	27.76%	11.11%	23.60%	Complete	Trees cutting permission / transplantation expected by 31.03.2020
Grand Total Phase III		100.00%	57.09%	71.02%	100.00%	

Reason for delay :

- 1. Delay in permission for trees cutting/transplantation**
- 2. EPCA Ban on Construction Activities**

Related to Chapter – 4 : Sewage Treatment Plant

6 Monthly Mile Stones for Civil & E&M Works For Rithala								
Name of Works: Rehabilitation And Upgradation Of Rithala Phase I Waste Water Treatment Plant (WWTP) of 182 MLD With Effluent Standards Of BOD \leq 10 mg / L, TSS 10 mg / L Or Better Under YAP (III) Package R2.								
Agency: M/s VA TECH WABAG LIMITED								
Total Cost of Work: Rs. 2,19,47,70,300 (Civil Works : 96,36,20,300 plus E&M Works 123,11,50,000)								
Sl. NO	Structure Details	Total	Progress Upto Jun 20	Progress Upto Dec 20	Progress Upto Jun 21	Progress Upto Dec 21	Progress Upto Jun 22	Remarks
1	Inlet Works	7.02%	3.93%	4.61%	Complete	-	-	Tree Hindrance. Transplantation considered by Jun.20
2	Primary Settling Tanks	3.47%	1.68%	2.28%	2.82%	3.11%	Complete	
3	Aeration Tank	17.79 %	2.73%	5.05%	6.82%	11.08%	Complete	Tree Hindrance. Transplantation considered by Jun.20
4	Secondary Settling Tanks	8.38%	2.22%	5.12%	5.90%	6.88%	Complete	
5	Tertiary / Filtration	11.54 %	6.50%	7.27%	9.55%	11.45%	Complete	Tree Hindrance. Transplantation

								considered by Feb.20
6	Digesters	11.09 %	3.16%	5.89%	8.79%	10.63%	Complete	Tree Hindrance. Transplantation considered by Feb.20
7	Centrifuge / Sludge Drying Beds	5.16%	2.35%	2.93%	3.82%	5.07%	Complete	Tree Hindrance. Transplantation considered by Feb.20
8	Gas Holder	10.32 %	4.02%	5.42%	7.02%	8.43%	Complete	Tree Hindrance. Transplantation considered by Jun.20
9	Miscellaneous	25.22 %	3.69%	9.40%	16.93%	18.81%	Complete	Tree Hindrance. Transplantation considered by Jun.20
Grand Total Phase III		100.0 0%	30.28%	47.97%	66.72%	100.00%	100.00%	

Reasons for delay:

1. Delay in transplantation of trees. Transplantation of 88 No. Trees to be completed by Feb.2020 and case for permission of balance 524 pending with Forest Department.
2. EPCA Ban on Construction Activities.

Related to Chapter – 4 : Sewage Treatment Plant

Construction of 564 MLD (124 MGD) WWTP with Effluent standards of BOD – 10 mg/l, TSS – 10 mg/l, or better and Power Generation on Design, Build and Operate (one-year DLP plus 10 years O&M) basis & demolition of existing Phase- I, II, III and IV (Package-O) WWTPs at Okhla under YAP-III										
Six Monthly Milestones										
Sl. No.	Unit Description	Unit Wtg.	Jun'20	Dec'20	Jun'21	Dec'21	Jun'22	Dec'22	Remarks	
1	Site Mobilization and Demolition	5.63%	2.35%	3.23%	4.55%	5.12%	5.54%	5.63%	Hindrance due to tree cutting. Case is under process in the Forest Department.	
	Common Diversion Chamber (15x20)									
	Inlet Structure (Screen/Grit Chamber/By pass)									
	Substation 3 (Inlet)									
2	Primary Sedimentation Unit	6.41%	2.34%	4.04%	5.27%	6.04%	6.29%	6.41%	Hindrance due to tree cutting. Case is under process in the Forest	
	Primary Sludge									

		Thickener (for each thickener)								Department.
3	Aeration Tanks	Bioreactor	21.37 %	7.75%	10.84 %	17.57%	19.79%	20.93%	21.37%	Hindrance due to tree cutting. Case is under process in the Forest Department.
		Substation 1 (Bioreactor)								
		Process Air Blower								
4	Secondary Settling Tank/RAS P/House	Secondary Clarifier	13.38 %	2.98%	4.86%	7.65%	12.53%	13.11%	13.38%	Hindrance due to tree cutting. Case is under process in the Forest Department.
		Return Activated Sludge Pump House								
		Substation 2 (RAS)								
5	Tertiary Treatmen t Unit	Tertiary System	12.52 %	2.80%	5.46%	8.67%	10.04%	12.27%	12.52%	
		UV System								
		Treated Water Reuse Sump Pump House								
		Treated Effluent Channel								
		Substation 4 (Treated Water Reuse Pumphouse)								
6	Digester Units	Thermophilic Digester	12.35 %	2.33%	4.76%	8.68%	11.41%	12.11%	12.35%	

		Biological Sludge Pre-Thickener								
		Thickened Sludge Pumping Station and Sludge Treatment building								
		Mesophilic Digester								
		Digester Control Building								
7	Centrifuge/Sludge Drying Bed	Gas Scrubbing System	18.44 %	1.98%	6.11%	12.33%	17.25%	18.07%	18.44%	Hindrance due to tree cutting. Case is under process in the Forest Department.
	Chemical Building									
	Solar Drying & Sludge Storage									
8	Gas Holder/Gas Engine/Scrubber	Gas Holder	5.15%	0.45%	0.89%	2.90%	4.05%	4.87%	5.15%	
	Gas Flare									
	Power generation Unit									
9	Miscellaneous	Storm Water Drain and Roads	4.75%	0.85%	1.88%	2.59%	2.84%	4.32%	4.75%	Hindrance due to tree cutting. Case is under process in the Forest
	Maintenance Workshop									

		Boundary Walls, Gates, Security Rooms								Department.
		Admin Building								
		TOTAL PROGRESS ANTICIPATED	100.00%	23.83%	42.07%	70.21%	89.07%	97.51%	100.00%	

Related to Chapter – 4 : Sewage Treatment Plant

SUBJECT: 6 monthly Milestone for construction of 318 MLD WWTP at coronation pillar.

AGENCY: M/s L&T- PE&E JV

The work is in progress and 70% work has been completed so far. The work has been delayed due to EPCA ban on construction activities in Delhi from 26.10.2019 to 09.12.2019. Still there is partial ban on construction activities and construction work is allowed from 6.00 AM to 6.00 PM. The 6 monthly milestone for completion of work are as under:

- a) Completion and commissioning of 50% liquid stream work along with 4 digesters by 31.7.2020
- b) Completion and commissioning of entire plant by 31.10.2020

Related to Chapter 5 – Interceptor Project

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003**

No. YPMC/2019/ 277

Dated: 31.7.19

Subject: Minutes of the meeting held under the Chairmanship of Member of the Monitoring Committee on 22.7.2019 at 2.30 PM for review of various projects and Action Plans of Delhi Jal Board.

The list of the officers who attended the meeting is enclosed.

At the outset, Member M.C. referred the order dated 12.7.19 of the Hon'ble NGT in the Manoj Mishra matter wherein parties to the case are required to submit compliance of the Tribunal's order dated 13.1.15 before 5.8.19. The Tribunal has shown its concern over the slippages of various time lines given by the State Governments and other public authorities. The Tribunal has observed that there has been no meaningful progress in the last three years. The work of 14 STPs has not even begun for which no justification has been furnished. The Coronation Pillar STP was to be completed by 11.04.2019. Work of ISP on Najafgarh, Supplementary and Shahdara drains was to be completed by 31.12.2018. 11 drains were said to have been trapped and work for trapping of 5 drains was to be awarded and completed by December 2020, except the one for which the work was to be completed by 2018. The Member M.C. asked the DJB Officers present to file response to the above order in time so that M.C. can submit its report thereafter by 10th August 2019. Response should cover the reasons for slippage of targets given by Delhi Jal Board and the new timelines.

DJB has submitted status report of various activities reviewed by M.C in its meeting with DJB on 16.4.19 and 20.6.19. The activity wise Status Report and the directions given by the MC are as under:

1(a). Interceptor Sewer Project:

The target date of completion of the project informed to the MC in the beginning was December 2018. It was later revised to June 2019 and has now been revised to December 2019. CE in charge explained that M/S EIL-a Govt. of India Enterprises- is the Project Consultant and the DJB has no control over them. Moreover, one of the contractors, M/S Pratibha Industries, is on the verge of bankruptcy and that DJB is somehow trying to get the work completed. Rescinding project and re-inviting tenders at this stage will cause further delay. However, the project is expected to be commissioned by December 2019 by which time the STPs (Coronation and Kondli STPs) under the concerned packages will also be ready to receive the sewage. MC regrets to note that there is no sanctity to the timelines given which have been altered repeatedly with no sense of responsibility. This is poor planning and project monitoring. DJB must give the convincing reasons for the delay. If DJB is so helpless, it shows a callous disregard of assurances given and obviously no critical path is being followed to ensure there are no repeated slippages. MC may consider having an independent technical audit of the project done to assess the progress achieved so far and work that remains to be done in order to commission the project within the timelines now given by the DJB. Since MC is required to submit a report to the NGT by 10.8.19, MC would like the team of DTU and Shri Tyagi to undertake an assessment of the claims of DJB regarding the work done so far and the work that remains to be done to commission the ISP by 31.12.19. Similar assessment may also be done for Coronation and Kondli STPs which are also targeted to be completed by December 2019

MC also wanted to know the veracity of the DJB's claim that at present 125 MGD of sewage is actually being trapped by the ISP. The CE informed that the figure of 125 MGD is the flow measured in the drains trapped so far and not on the basis of actual flow measured at the point of trapping. He also informed that the DJB has not verified it independently. MC finds this unacceptable and, therefore, asked the DJB to do this within one week. Shri Tyagi along with DTU will also have this verified independently.

1. (b) Drains not covered by ISP:

The ISP has the target to trap 108 drains. The EIL study had pointed out additional 204 drains in the catchment of Najafgarh, Supplementary and Shahdara drains. The MC had in its meeting with the DJB on 20.6.19 asked for an Action Plan to trap/stop the flow in these 204 drains. As per the Action Plan received from DJB, 70 drains out of 204 fall within unauthorized colonies which are targeted to be seweraged by 2021 and 53 out of 70 drains are expected to be trapped in 2019. In 134 out of 204 drains, the flow is coming from seweraged areas, which require maintenance as well as individual sewer connections to be provided to prevent flow of sewage in the drains. The DJB does not seem to have any plan for this except to say that the Board will take it up with the MCDs for action under the Municipal Laws. DJB cannot abdicate its responsibility and leave this to the MCDs alone. If water is being provided by the DJB, the manner in which sewage will be handled must also be taken care of, failing which punitive measures should follow. As per the Action Plan, which is quite vague, these 134 drains are also carrying the waste water from 675 JJ Clusters. MC has been told that the sewage from the JJ Clusters continues to flow into the drains despite assurances from DJB and DUSIB that the community toilets are either linked to the DJB drainage system or the septage is transported to the STPs. DJB should also take it up with DUSIB. If the drains continue to have waste water even after the sewer network has been provided, the very purpose of sewer network gets defeated. The DJB should, therefore, give timelines to fix maintenance issues in seweraged colonies and provision of sewer connections to individual households. MC is commissioning a random check through DPCC but CEO should not wait for that report and is expected to have a survey conducted as the custodian of sewage.

2. Progress of STPs:

i. STP at Coronation Pillar: The CE in charge informed that the 70 MGD STP will be commissioned at 50% capacity by December 2019 which includes liquid line and digesters/ gas holders. The plant at 100% capacity will be commissioned only by March 2020. The MC reminded the DJB that the target date for commissioning of the project as per the 2nd Interim

Report (Page 19) submitted to the NGT on 27.5.19 is December 2019 and the DJB should adhere to this deadline.

ii. Upgradation schedule of 9 STPs (excluding Keshopur Ph-II & III): Out of 9 STPs, rehabilitation of Yamuna Vihar Ph-II has already been completed and made operational in February, 2019. However, the up-gradation of this STP to achieve the treatment standard of treated effluent BOD <10 & SS <10 will be done by December, 2020.

Other plants, namely, Kondli, Okhla and Rithala are being taken up under YAP-III for which target date of completion was given as under: -

- | | |
|--------------------|------------------|
| - Rithala Phase-I | - December, 2021 |
| - Kondli Phase-I | - March, 2020 |
| - Kondli Phase-II | - February, 2022 |
| - Kondli Phase-III | -Dec 2019 |

MC is considering having an independent technical audit done with respect to the work completed so far and the work that remains to be completed for these STPs and whether the timelines will be met.

Regarding rehabilitation of Okhla Ph-I, II,III & IV, it was explained that instead of rehabilitating the individual STP, one new STP of 124 MGD will be constructed at Okhla. The work has been awarded and is scheduled to be completed by 31st December 2022.

iii. Progress of proposed 14 new decentralized STPs in Najafgarh area: CE in charge informed that as per directions of the Board, flow measurement has been done in the drains in the command area of 14 STPs by M/s. WAPCOS. The Consultants have recommended capacity of each STP. Accordingly, the proposal was placed before the Board. The Board has approved the revised proposal with several conditions. In the meantime, the Concessionaire M/S L&T have submitted revised financial proposal as there was no escalation clause in the contract which was finalized more than 2 years back and agency is not ready to do the work at old rates. DJB has not decided whether same agency will execute the work at old rates or present contract will be closed and reprocessed for awarding new contract after inviting tenders.

On acquisition of land, it was informed that for expediting the process of acquisition of land, meetings at the level of Chief Secretary and CEO has been held. DJB is pursuing the matter at each and every level. The land is available only at 2 locations where NMCG funds are

available. DJB is also pursuing NMCG for funding entire project so that work at all STPs where land is available could be started. MC noted with regret the completely unprofessional manner in which the whole issue has been handled by the DJB resulting in zero progress even after a lapse of almost four years after NGT's judgment.

iv. **Construction of decentralized STPs:** C.E. DJB informed that land at 46 locations has been requisitioned from Delhi Government. At most of the locations, there is Gram Sabha Land. At the level of Chief Secretary, Delhi; all requisitions for land have been clubbed together and processed for approval. Since the allotment of land for all the 46 locations could take considerable time, the DJB may consider de-clubbing the proposals so that as and when land is available for each project, the next step for planning for the projects could be commenced. However the MC also drew the attention of the DJB to the observation on decentralized STPs given in the 2nd Interim Report of the Committee, wherein it has been suggested that alternative approaches to sewage treatment may also be considered before going ahead with setting up of STPs. The DJB needs to take into consideration the experience of having set up STPs in some areas where even after several years of their commissioning there isn't enough flow resulting in heavy under-utilization of capacities.

v. **Underutilized STPs:** The M. C. drew attention of the Officers to the following 6 STPs where capacity utilization is very low and wanted to know the Action Plan of DJB to remedy this.

Name of STP	Designed Capacity	Treatment	% utilization
Rohini	15	5	33
Narela	10	4	40
Kapashera	5	2	40
Nilothi	40	16	40
Najafgarh	5	2	40
Yamuna Vihar (10,10&25)	45	28	62

Shri Tyagi, former Member (Dr), DJB suggested that above STPs can be utilized to their full capacity by trapping the following drains which flow nearby:

- i. Sewage from Supplementary drain on upstream side of Rithala STP can be trapped into Rohini STP
- ii. Entire waste water from Drain No. 6 can be trapped and taken to Narela STP for treatment. Present arrangement of creating a temporary weir by gunny bags is not adequate. Instead of constructing a gated barrage, a weir arrangement would be more appropriate and would require minimum maintenance and operation cost.
- iii. Sewage from Rajokari, Samalkha, Mahipalpur and Bijwasan can be trapped into existing sewerage system after making it functional and conveyed to Kapashera STP.
- iv. Dharampura drain flowing across the road can be trapped into Najafgarh STP. It was pointed out that trapping structure is already constructed which can be made functional.
- v. Jahangirpuri drain can be trapped into Coronation Plant which will increase sewage intake by 5-6 MGD at Coronation STP for which spare capacity exists. Sewage from Jahangirpuri slum can be trapped in Jahangirpuri SPS. Similarly, Model Town drain can be trapped into Dheerpur Sewage Pumping Station.
- vi. Capacity utilization of Nilothi and Yamuna Vihar STPs can be improved once ISP is commissioned in December 2019.

The DJB Officers present agreed that since most of these works are mainly for creating permanent weirs across the drain, not more than 5-6 months would be required to complete these works. Trapping these drains, as a short term measure, will help reduce pollution in the river while at the same time improve capacity utilization of the six STPs listed above. DJB should, therefore, on priority basis, complete the process of preparing plans/estimates and tendering during the monsoons, so that works can commence immediately after cessation of monsoons. All the works listed above should be completed by 31.12.19 as agreed in the meeting.

3. Management of Sewage in Untrapped Major drains:

- i. **Barapulla Drain**(Flow:151.2 MLD): MC wanted to know the status of Short and Medium term measures proposed by DJB and submitted to the NGT which were required to be completed by the end 2014 and by 31.8.15 respectively. The Short term measures were expected to reduce sewage by 25 MGD and another 5 MGD through the efforts of NDMC. In addition, further reduction in sewage was expected by the medium term measures of rectification of defective sewers. The CE in Charge informed that action has been taken on most of the activities. MC was also apprised that the catchment area of Barapulla drain includes the planned colonies of Jungpura, JalVihar, Andrewsganj, Greater Kailash, Deer Park, Sarojini Nagar,

Safdurjung Enclave, Masjid Moth, Panchsheel Park, Saket, Press Enclave, Chirag Delhi, PragatiVihar, Naroji Nagar, Defence Colony, South Ex., Nizamuddin, Seikh Sarai etc. Apart from these, the command area also includes NDMC area joining Barapullah through SunehariBagh drain. The unplanned areas include SangamVihar Phase-I & II, MaidanGarhi&Saidulajahab, Part of Mehrauli, Neb Sarai, Sainik Farms etc. The sewer network in 70 out of 136 unplanned colonies was targeted to be completed by 31.12.17.

MC directed the DJB to submit status of all the short and medium term activities within one week. Also, it must be informed as to how much flow has been reduced in Barapulla drain because of these actions and how much more is expected to be reduced when all the works, some of which have not yet been completed, are completed. The progress of laying sewer network in unauthorized colonies may be informed to the MC, Possibility of trapping of sewage of SangamVihar into existing M.B. Road sewer line, as suggested by Shri Tyagi, may also be explored and informed to M.C. within a week's time. The issue of setting up STP at the Barapula drain, if required, may be considered only after an assessment of how much flow is required to be treated after all the planned measures in the Action Plan have been completed. As regards the Sewage from the NDMC areas, the MC has already issued certain directions and need to be pursued by the DJB.

ii. **Morigate Drain**(Flow:51 MLD): In the meeting taken by the MC on 16.4.19 DJB had informed that STP for the sewage in Qudasia + Mori gate drain, will be set up only after land is allotted by the DDA. The DJB had also made a statement before the NGT on 18.12.17 that the STP will be set up once land is allotted. This issue has been examined further and the MC has learnt that the entire catchment area of this drain, which mainly covers the colonies of Kashmiri Gate, Subzi Mandi, Mori Gate, Sarai Poos, Old G.T Road, Civil Lines, Rajpur Road, Court Road etc, is sewered. That being the position, MC finds that rather than locating the sources of sewage coming from sewered areas and plugging that, DJB is unnecessarily deflecting the issue to the delay in allotment of land for a new STP. The question that needs to be answered is, whether a new STP is at all required or that the issue is mainly of maintenance. The MC would like to have this matter looked into by the CEO and ascertain as to why the issue has

unnecessarily been deflected and simultaneously fix maintenance issues. An action Plan for this be submitted to the MC within a fortnight.

Sunheri Bagh Drain: The M.C. had held as meeting with NDMC and Delhi Jal Board on 12.07.2019 for reducing discharge in Sunheri Bagh drain as it is passing through sewerage area partly under Delhi Jal Board and majorly under NDMC. The CE, NDMC was directed to measure the discharge at two points of drain i.e. entry and exit points of NDMC area so that it can be decided how much discharge, if any, is added in NDMC area which can be diverted to sewerage network. Similarly, Delhi Jal Board was directed to stop sewage flowing into this drain from their area, which is sewerage, by diverting to their regular sewerage network in Paharganj.

iii. **DrSen Nursing Home Drain(Flow: 41 MLD):**This drain is also passing through sewerage area partly under Delhi Jal Board and majorly under NDMC. The CE, NDMC was directed to measure the discharge at two points of drain i.e. entry and exit points of NDMC area, so that it can be decided how much discharge is added in NDMC area which will be diverted to sewerage network. Similarly, DJB was directed to stop sewage flowing into this drain from Paharganj and DeenDayalUpadhyay Marg under their control and divert it to the Sewer network. Railway department was also to be asked to divert their flow into DJB sewerage network.

iv. **Sonia Vihar Drain:** MC was informed by Shri Tyagi that he has inspected this drain along with DTU team and had a discussion subsequently with DJB officials on 16.07.2019. Short, Medium & Long term plans for reducing sewage and pollution in this drain have been suggested. In the short term, Delhi Jal Board will install floating/ static aerators and other in-situ treatment methods in the pond which is collecting sewage of Sonia Vihar drain for reduction of BOD by December 2019. The issue of setting up STP and laying of sewer network in the unauthorized colonies can be planned thereafter.

v. The other drains, namely, **Shastri Park Drain (Flow: 4.3 MLD), Kailash Nagar Drain (Flow:7.8 MLD), Abu Fazal Drain(Flow:35 MLD), Jaitpur drain(Flow: 23.3 MLD) and Tuglakabad Drain(Flow: 45.8 MLD)** have Un-authorized colonies in their catchments some of which have already been sewerage but household connections have not yet been taken and others are yet to be brought under sewer network. Since the flow in all the drains is substantial (116.2 MLD), DJB was directed to come up with a plan for connectivity to the sewer network and for making it incumbent on households to take sewerage connections. Since the problem of not taking household connections despite the sewer network having been laid is widespread, effective measures must be taken to compel people to take connections. Not only has vast infrastructure set up at heavy cost been lying unused, the main objective of controlling

pollution has been nullified. DJB officers requested for some time to survey these drains and prepare an Action Plan. MC asked the DJB to complete the survey of above drains and submit the Action Plan by the first week of August 2019.

4. **On Line Monitoring System (OLMS)**: It was informed that all the 35 STPs have been provided with facilities of OLMS. Request for linking 2 STPs with the servers of CPCB and DPCC has been made and once CPCB and DPCC approve that all the 35 STPs will be connected online with servers of CBPCB and DPCC on a real time basis. Occasionally equipments at some STP are not functioning but these are being rectified immediately. Alerts are being generated both online and through SMS and SOP for attending to alerts have been finalized and put into operation. The OLMS data compares with lab test reports within 15-20% variance and calibration is being done once in 15 days as prescribed. LED display board will be put outside each STP by 15.9.19 and the STP data is already in public domain. Flow meters have already been installed at all the STPs and 13 flow meters are connected online and the flow meters in the remaining STPS flow meter will also be connected within 15 days.

5. **Automation of Sewage Pumping Station**: Member MC asked DJB about automation of Sewage Pumping Stations to reduce manual intervention and smart ways of pumping sewage so that sewage is pumped regularly as per the command. MC was informed that a trial was done on Kewal Park SPS successfully. DJB informed that for doing automation, all sluice valves will be replaced with actuators valves which is costly affair. However, the scheme of rehabilitation of all 58 SPS is being prepared under which automation will be done. It was suggested that level indicators should transfer data to website for real time monitoring of sewage level in sump of the SPS. CEs (SDW) were given 1.5 month to complete this task. At the same time an action plan be prepared for complete automation of SPS,

6. **Use of Treated effluent**: The issue of use of treated water was discussed with all the E-in-Cs of DMCs, Senior Officers of DDA and DJB on 21.2.19. In the said meeting it was agreed that pending laying of pipeline for conveyance of treated water from STPs to the parks, all the park owning agencies will lift treated waste water using tankers. The MC was informed that despite DJB pursuing with all the park owning agencies, none of them has come up for lifting treated waste water from the STPs. While the MC will separately take it up with the concerned Officers/Agencies, the DJB was asked to exercise the powers available to them under the notification of 2010. In a separate meeting with the Divisional Commissioner and DMs on 4.7.19, the DMs have been asked by the MC to exercise the powers under the 2010 notification issued by the Lt Governor and take action against borewells using ground water for gardening and parks where treated waste water was available. It was directed that the notice be issued

to all the park owning agencies where parks are situated within 5 KM of any STP to use only treated waste water for watering the parks failing which bore wells will be sealed.

7. **Septage Management:**The DJB informed that so far 96 licenses have been issued and about 1.60 crorelitres of septage handled. MrVaishya, CE informed that every day about one lac litres of septage is being received at the designated SPSs. MC finds the progress slow primarily due to absence of enforcement. The CE informed the MC that as directed by the MC a meeting, CEO has held meeting with the Divisional Commissioner and DMs/SDMs on 12.7.19 and with this enforcement is expected to improve. The MC wanted to know the specific details of the action Plan agreed between the Div Com/DMs and the CEO DJB to gain confidence that what has been agreed will help in more effective enforcement of the Septage Regulation. A report on this be submitted to the MC within a fortnight.

8. **Road Map of actions taken on river water quality:** In the Action Taken Report submitted by the DJB, it has been mentioned that the BOD load reduction in the river by Dec. 2019 will be 67 tons per day and 19 tons per day by Dec. 2020. This is not what was asked of DJB. What the MC would like the CEO DJB to work out is the improvement in the quality of water in river Yamuna due to cumulative impact of the activities planned and executed by the DJB, the IFCD and other stakeholder in Delhi. Rather than an adhoc response, a well thought out and reasoned roadmap be prepared and submitted to the MC formally by the DJB. It was directed that this be submitted at the earliest as the same is to be incorporated in the next Report of MC to the NGT.

These Minutes of meeting have also been seen by Member (MsShailaja Chandra) and are being issued with her concurrence.

**Sd/-
B.S. Sajwan
Member,
Monitoring Committee for Yamuna**

To:

- 1. CEO DJB**
- 2. Member(Drainage) DJB**

Annexure – C-5/2

Related to Chapter 5 – Interceptor Project

Action Plan alongwith timelines for trapping of sewage in 204 drains in Najafgarh, Supplementary and Shahdara basin, which are not intercepted under the Interceptor Sewer Projects (ISP)									
Details of the 204 drains are as under:-									
S. No	Name of C.E	No. of Drains	Trapped	2019	2020	2021	2025	Remarks/Trapping not required	Other Department
1	CE (C&N)	22	18	0	1	-		3	
2	CE East	81	-	-	80	-		<p>All the untreated sewage discharging into Shahadara drain of east Delhi shall be trapped by taking following measures</p> <ol style="list-style-type: none"> About 0.82 lac sewer connection are to be provided in notified area under “Mukhya Mantri Muft Sewer connection Yojna” by DJB to remaining consumer and work is likely to be completed by 31.03.2020 . There is proposal of trapping all the discharge coming from Delhi Jurisdiction at Kalyan Puri SPS after construction of Barrage. The work of barrage is in progress and likely to be completed by 31-03-2020 subject to removing the ban on construction. 	1 of DDA
3	CE South	2	1	-	-	-	-	1	-
4	CE West	20	8	-	6		-	6	
5	CE (DR)Pr-I	9	2	-	2	2	1 drain will be completed within 24 month after allotment of land	Sewerage system is being laid in the command area of these drains and flow will be trapped in the sewerage system after commissioning/notification of the same.	2 drains in Haryana state
6	CE (DR)Pr-II	11	5	-	6	-	-	do	-
7	CE (DR)Pr-III	59			46	11	2 drains will be completed within 30	Sewerage system is being laid in the command area of these drains and flow will be trapped in the sewerage	

							months after allocation of fund for construction of STP by NMCG and allocation of fund for internal sewer by external funding agency.	system after commissioning/notification of the same.	
Total	204	34	0	141	13	3		10	3

Related to Chapter 6: Repair and maintenance of Drains

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003**

No. YPMC/2019/ 321

Dated: 7/10/19

Subject: Minutes of the meeting held by the Two Member Yamuna Monitoring Committee on 25.09.2019 at 2.30 PM, followed by inspection of the area on 27.09.2019 regarding grievances of RWAs of Greater Kailash -1, Defence Colony and Nizamuddin (West) relating to pollution in Kushak and Barapulla drains.

The list of the officers and RWA representatives that attended the meeting and inspections is enclosed as **Annexure-I**.

Background of the Court Orders: A meeting of the Monitoring Committee appointed by the Hon'ble NGT was held on 25.09.2019, to look into the grievances of the RWAs of Greater Kailash-I, (GK-I) Defence Colony & Nizamuddin (West) relating to health hazards they faced due to emission of toxic gases and foul odor emanating from the open portion of the storm water drain carrying sewage and huge quantities of solid waste. These were impeding the flow of waste water and polluting the drains. While the matter pertaining to RWA GK-I(North) was referred to the MC by the Delhi High Court vide order dated 24.4.19 in WP (C) 4246/2019, CM No. 18982/2019, the matter pertaining to Defence Colony and Nizamuddin West drains was referred to the MC vide Hon'ble Supreme court's orders dated 18.2.19 and 25.3.19 respectively.

In compliance of the Court orders, the matter relating to the RWA of GK was taken by the MC on 5.8.19 and 25.9.19, the matter relating to Defence colony was taken up on 11.4.19 and 1.7.19 and that relating to Nizamuddin West RWA on 31.7.19 and 25.9.19. In the meeting on 25.9.19 MC took up the progress made on agreed action points keeping in mind the grievances of the RWAs. Since all the

matters were connected with the Barapulla drain and its tributary drains a site inspection for all segments was undertaken on 27.9.19.

The Barapulla Drain and its Tributaries: A large number of storm water drains originate from the ridge to finally drain into the river Yamuna. Barapulla drain, which derives its name from a 12 arch bridge of the Mughal period. This drain outfalls into the river Yamuna across the Ring Road near Sarai Kale Khan Village. The drain carries a mixture of storm water and sewage emanating from the following smaller drains:

- a) Satpula (7 arched bridge) drain originating from the South Ridge.
- b) Kushak drain (including Mehrauli Drain) originating from the Central Ridge.
- c) Drains near AIIMS and INA market and Lajpat Nagar.
- d) Sunehr iNala from Lodi garden area.

This drainage system is entirely located within the NCT of Delhi and carries no discharge originating from outside of the city. In other words, unlike many other drains which are connected to drains from the townships of Haryana and UP, the discharge here is a Delhi problem from start to finish.

Sewage from NDMC area enters this drainage system through Sunehri Nala drain at Nizamuddin West. Sewage coming from unsewered areas especially from unauthorized colonies and even from planned and sewerred areas where sewer lines have become defective due to ageing is carried by the drain. Delhi Jal Board had submitted its action plan to NGT for trapping sewage flowing into Barapulla and its tributaries in 2014 according to which most of the work was to be completed by 2017. However very little appears to have been done on the ground with no improvement in terms of containment of pollution. Specific directions were issued to the SDMC in March and July 2019 to take stock of the pollution emerging from the NDMC drain in the current situation prevailing there. The Monitoring Committee inspected the Kushak and Barapulla drains on 27.9.19 along with the concerned officers of Delhi Jal Board, South DMC, DPCC and representatives of RWAs.

The following RWAs explained their grievances and accordingly MC issued appropriate directions:

1. **Greater Kailash-1 RWA:** Mr Daleep Jolly, representative of G.K.-1 RWA submitted several documents containing appeals filed in the Hon'ble High Court, various directions of the court from time to time, from the year 2004 together with a Mercy Appeal before the Monitoring Committee on 16.07.2019. He explained how the drain passing on the rear side of their houses

(from House No. B-149 to B-219) abutting the drain was carrying sewage due to which noxious gases i.e. Methane, Hydrogen Sulphide and Carbon Monoxides were being emitted causing health hazards to the residents living in those houses. He also showed the test results of the waste water flowing in the drains and the impact of the same on air quality (Reports annexed). On the directions of the Hon'ble High Court, in a hearing held on 4.3.2006 Mr. B.M. Dhaul, the then Chief Engineer (Drainage) DJB had filed an affidavit undertaking to execute certain works for reducing sewage in the drains in a time bound manner. But, nothing appeared to have been done by DJB.

The Hon'ble High Court passed a contempt order on 25.11.2008 which states:

"The attitude of the officials of DJB to be callous and negligent and holding them guilty of contempt of court while awarding the suspended sentence of two weeks civil imprisonment and fine of Rs. 20,000/- each. It was stated that if the entire flow of sewage into storm water drain is not stopped within three months, the respondents were to undergo civil imprisonment". However, subsequently in an appeal against the contempt order the respondents were discharged and CCP was closed.

Hon'ble High Court in the present case W.P.4246/2019 vide order dated 24.04.2019 has referred this matter to the Monitoring Committee appointed by the NGT for passing appropriate orders to the concerned departments.

The representative of the RWA submitted before the MC that as per the directions of the Hon'ble NGT in a matter of Manoj Mishra Vs UOI, the construction and covering of this drain was stopped by the South MCD as the drain was covered up to less than 85%, whereas as per the RWA calculations the work left in this drain is far less than 15%. He argued that with three sides of the box drain completed over the entire length, only the cover on the remaining length needs to be provided which amounts to only 2-1/2% of the total concretization work. He further argued that the South MCD did not present the case properly before the NGT.

RWA therefore requested the Monitoring Committee to give a direction to South DMC to cover the balance portion of the drain to avoid the adverse effects of harmful gases and also to clear the drain of all the Solid waste deposited in the drain. Further, the Delhi Jal Board should stop sewage flowing in this drain as it is a storm water drain and the pollution causes a grave public nuisance and amounts to criminal negligence.

Observations of MC during inspection of drain on 27.09.2019 and directions issued:

1.1 The Constructed drain has four Box RCC sections for maximum discharge during rainy and stormy weather. During the lean season however the flow is restricted to one or two box channels. During the visit of the MC, sewage was in fact found flowing in only two boxes of the drains. The drain appeared to have been cleaned / desilted in this portion. In the remaining two boxes the waste water was stagnant as the drain had not been de-silted. It was informed by SDMC that cleaning of covered portion of the drain is difficult and dangerous due to emission of noxious gases. MC directed SDMC that flow in all the boxes of the RCC drain must flow smoothly for which, historical silt already deposited in the covered drain must be removed by application of the latest technology/equipment. Robotic cleaning may be an option. However it is for the SDMC to consult experts and take such measures as are necessary for cleaning the drains in an efficacious and safe manner. For stopping silt and floating material in the covered portion of the drain in future, South DMC may consider constructing silt chambers and fix Boom barriers / Bar Screens at the entry point and in the open portion of drain in consultation with experts for preventing silt and floating material from entering the covered portion of the drain which is continues for quite a distance. The concerned S.E., South DMC was also asked to explore the feasibility of putting removable slabs at regular intervals after breaking the permanent RCC roof of the drain to facilitate regular de-silting, maintenance of drain and so as to prevent noxious gases being generated which can be dangerous.

1.2 A lot of floating solid waste had accumulated which was visible from the open portion of the drain. This had resulted in virtually stagnant flow suggesting that there the accumulated solid waste and silt underneath had not been removed. Only some work of removal of floating material was done recently by SDMC as informed by the RWA just prior to the inspection by the Monitoring Committee but even so a lot of debris was still found lying in the drain. The Monitoring Committee directed SDMC to clean the drain regularly.

1.3 It was observed that a lot of malba had been dumped on one side of the drains which was being leveled with the help of J.C.B. during inspection. RWA informed that this is a regular feature of dumping solid waste on the side of the drain. The trucks enter from the gates which are under the control of SDMC. The MC directed SDMC to keep a vigil on unauthorized dumpers and challan them heavily and if they are trucks contracted by the MCD the officers/ engineers would be held responsible. The SDMC was asked to install CCTV cameras which could capture the registration numbers of the trucks. The RWA was asked to extend their help to make the CCTV monitoring effective and to help identify the trucks by

registration be it with a Delhi or outside state registration. The MCD was asked to issue instructions and make a copy available to MC.

1.4 The uncovered portion of the drain should be protected with fencing/ or with grills to prevent accidents as anyone can fall into the drain particularly in the dark. This should be done immediately by South DMC and warning lights /signage displayed as there is a danger of passersby, children and rag picker's falling into the drain which must be safeguarded immediately. The stoppage of concretization orders of NGT will not be circumvented however.

1.5 A system for inspection of CCTV footage should be put in place and the Executive engineer of SDMC made responsible for ensuring that no dumping takes place in or around the drain or vacant areas.

1.6 Since the drain is covered, foul and noxious gases were finding an outlet only through the uncovered portion of the drain. It was observed that vent shafts have not been installed on the covered portion of the drain to provide an outlet to the gases formed inside the drain. South DMC was directed to install the vent shafts of appropriate heights at a regular intervals along the length of the drain observing standard specifications for outlets for the emission of gases form the drain. If required an expert may be consulted about the size, height of the shafts and distance between shafts.

1.7 DPCC was asked to draw a sample of waste water flowing in the drain to assess the pollution load of the waste water in the drain at inlet and outlet points and measure the flow and send quarterly reports to MC.

1.8 This being a storm water drain, no sewage should be allowed to enter the drain. The Delhi Jal Board was directed to submit Short Term, Medium Term and Long Term Action Plan or reducing sewage flow in the drain. Mr. Vikram Singh, C.E., DJB presented the Action Plan for reduction of sewage in these drains, as annexed. He informed that approximately 14 MGD sewage will be diverted to the respective STPs by June 2020 in a phased manner after completion of some works as mentioned in the Annexures A to E. Around 2.0 MGD treated effluent is also flowing in this drain. It was made clear to the officers of Delhi Jal Board that if the above Action Plan is not implemented in time given by them, the MC will be constrained to recommend action to the NGT and the Government considering that there is already a Contempt order passed by the Hon'ble High Court. Mr. Vikram Singh C.E. / Nodal officer has been given repeated opportunities to prevent sewage flowing in the drain. No excuses of administrative kind will be accepted as the timelines have been given after in -depth consultation and drawn up by DJB.

DJB was also directed to measure the flow at all the sewage discharge points into Chirag Delhi Drain and the flow at the entry of drain near Andrews Ganj within 10 days so that the expected outcomes can be confirmed.

1.9 The DJB was also directed that a survey should be carried of the entire length of the drain and its tributaries right from their origin till the drain meets the river Yamuna and entry points of sewage into the drain and the sources thereof identified and documented for the Action Plan to be comprehensive. The Action Plan submitted by the DJB based on the existing information should thereafter be updated for effectively plugging all the sewage flowing into

the drain and its tributaries. A piecemeal approach is not expected of DJB which has a statutory responsibility for the whole of Delhi.

CONCLUSION

The MC has given clear directions to South DMC to prevent entry of solid waste into the drain through preventive measures and enforcement. The DJB already has a plan which is expected to fructify in the next six months to prevent sewage from going into the drain. Once the effect of this is seen the question of whether to cover or not cover the drain can be addressed.

2. Defence Colony RWA:

2.1 Mr. Rajiv Suri, representative of Defence colony explained that a portion of the Kushak drain within Defence Colony was constructed and covered by DDA under Urban Development fund (UDF) provided by the Ministry of Urban Development, to DDA for carrying out the work of construction and covering of drain in this limited portion. This work had a faulty design and without giving a proper slope and cunette in the drain the work had been executed. No Environmental Impact Assessment (EIA) was conducted.

2.2 Though the drain is under the SDMC, the construction work of covering the drain was done the DDA without any consultation with the public. Also after stoppage of the work by the DDA on the orders of NGT, the covered and semi-covered portion continues to be with DDA and as a result SDMC does not do any maintenance work. Also DDA has also not been maintaining the drain satisfactorily. The residents continue to suffer due to this apathy on the part of the concerned government authorities.

2.3 Kushak storm water drain is carrying sewage along with a lot of floating material which is difficult to clean under the covered portion of drain. Before and after Defence colony, the drain is not covered.

2.4 DDA proposed to set up a small STP at the exit of Defence colony for using treated effluent for park irrigation to be constructed over the covered portion of the drain and to be maintained by RWA of Defence colony. But after the NGT order, DDA stopped the work.

2.5 After construction of this drain by DDA, it was supposed to be taken over by the South MCD which is the drain owning agency or further maintenance. But, SDMC is not taking over the drain as it was not constructed as per specifications and norms. DDA is not ready to give deficiency charges to SDMC for rectification work.

Appeal of Defence colony RWA before MC:

1. To order complete stoppage of sewage flowing through the drain, by diverting it to STPs.
2. Portions of the drain left in various unfinished stages should be dismantled. This is in conformity with directions in the *Mailey se Nirmal Yamuna* Judgment.
3. The gradient of the floor of the drain which was upset during the process of concretizing; should be rectified and a central 'cunette', created as earlier existed. This will stop the stagnation as water, which now spreads across the entire cross section of the drain, and only moves with hydraulic push of more water from behind. Simultaneously a slope should be made from the side walls towards the centre of the drain to direct water to flow through the centre, rather than spread through the entire cross section.
4. Proper ventilation should be provided through vent shafts to facilitate emission of foul gases.
5. A proper provision must be made at a regular interval for cleaning/ desilting of drain.
6. Regular desilting should take place, followed by clearing up the area of accumulated trash.

Observations of MC during Inspection and directions given to the concerned authorities:

- I. It was pointed out by the residents living in houses abutting the drain that Culvert over Kushak drain across Ring Road was very old and in a dilapidated condition which may collapse at any time causing an unforeseen mishap. Though MC is not concerned with rehabilitation issues of this kind, but observing the dilapidated condition of the culvert/bridge and the possibility that it might cave in, requested D.C. (South) DMC to take up the matter of construction of new Culvert

across Ring Road with concerned authority i.e. PWD or find the best engineering solution to deal with the situation.

- II. A lot of floating material was dumped at the entry of the drain into Defence colony. It was observed that cleaning of the drain was not happening. South DMC informed that they have not taken over this drain from DDA due to various deficiencies in the drain. DDA is not agreeing to pay the deficiency charges to South DMC. MC regrets to note the absence of the officers of DDA at the time of inspection despite the fact that they were aware about the inspection of this portion of the drain under their maintenance which was deliberated in the meeting held by M.C on 25.09.2019 **and all officers who attended the monitoring meeting had been asked to be present at the inspection.**
- III. A branch drain was found connected with the drain carrying waste water from Andrews Ganj side near Indira Camp of Andrews Ganj. It was reported that it was a treated effluent coming from a small STP set up in a Govt. Colony. Although an STP has been set up in the Govt. colony, it was observed that waste water was being discharged. A team comprising S.E. (S), DJB, S.E. (South), South DMC & DPCC was constituted to inspect the Government colony to see whether the STP was functional and to find a solution as necessary.
- IV. The entire drain was covered within the Defence colony and there is no proper access to drain due to which cleaning of the drain was difficult.
- V. The width of drain was squeezed near the outfall point of Defence colony after increasing the depth of drain.
- VI. Some small vents of HDPE pipes were fixed for emission of harmful gases from the drain but this was ineffective considering the size of drain. MC directed South DMC to work out a solution for proper ventilation for emission of the foul gases from the drain in consultation with Experts and RWA of Defence colony.
- VII. DPCC was directed to take the sample of waste water in the drain for testing and submitting a report thereon within 10 days.

CONCLUSION

MC feels that since DDA has no role in the matter any longer, it should expedite handing over the drain to South DMC on an "As is where is" basis after paying deficiency charges to them, as may be agreed between the Commissioner SDMC and the VC DDA within one month. MC will seek orders

on this from NGT so that there is finality. The continuance of this “no man’s land” syndrome is unfair to the residents who have been battling this before courts for long years.

On the question of dismantling the half/unbuilt portion of the drain as suggested by the RWA, the MC decided that in the first instance the outcome of the implementation of the DJB Action Plan to plug the flow of sewage in the drain and cleaning and desilting measures by the SDMC should be observed.

3. Nizamuddin (West) RWA: Mr. Sheikh Mohd. Umar, the representative of Nizamuddin RWA explained that Barapulla drain is S.W. drain, but huge quantities of sewage is flowing in the drain. A lot of solid and C&D waste is being dumped along the banks of the drain. RWA appreciated the work done by SDMC for cleaning the solid waste from the drain. But the pace of removal is not commensurate with the waste being dumped in the open areas near the drain. South DMC should accelerate clearing the solid waste and Malba from the bed of the drain Dumping of malba not only impedes the velocity/ flow of water but also reduces the carrying capacity of the drain.

The representative of the NDMC was not present at the inspection site despite clear instruction at the time of meeting on 25.9.19 and being reminded on phone by Shri Tyagi.

3.1 Appeal of RWA before the MC:

- I. Delhi Municipal Corporation should stop dumping of solid waste along the drain.
- II. Regular cleaning of drain should be carried out.
- III. A grill must be fixed along both sides of the bridge near Nizamuddin Basti to stop throwing solid waste into drain
- IV. Sewage should be stopped flowing into drain

Observations of the MC during inspection and directions issued to the concerned authorities:

- I. Sunheri Bagh drain carrying a lot of sewage from NDMC area is meeting with Kushak drain forming Barapulla drain from Nizamuddin Basti onwards. Delhi Jal Board informed that the Action Plan already submitted by them for Kushak drain will hold good for this drain too.

The representative of New Delhi Municipal Council was not present to explain the Action Plan for reducing sewage from NDMC area whereas; they have been given enough opportunities to take suitable action. MC took a very serious note on the callous attitude of the officers of NDMC. The MC would report this to the Chief Secretary who was holding charge of NDMC.

- II. It was informed by RWA that during construction of Barapulla corridor, a lot of earth & malba was left along the drain which was dumped for construction of temporary road for moving heavy machines. This excess Malba dumped on the drain should be got removed by the SDMC as it impedes the natural flow of the drain
- III. It was observed that the residents of Nizamuddin Basti are throwing solid waste into the drain. MC requested RWA to motivate residents of Nizamuddin Basti not to throw waste into drains. The RWAs should identify volunteers and assist SDMC in their cleaning efforts. RWA representatives were asked to meet DC, SDMC and work out modalities of citizens involvement in keeping the drain clean and prevent waste being deposited in the drain by casual visitors. SDMC should also tighten enforcement.
- IV. D.C. (South) DMC informed that the work of fixing grill along the bridge has been awarded and will be taken up shortly. In so far as prevention of solid waste dumping is concerned, J.E. store has been recently set up near Nizamuddin Basti across the bridge. Strict vigilance is now being kept on solid waste dumping.
- V. Efforts to green the area as a CSR activity would be pursued with IOC which appeared feasible.

MC will review the progress on the Action taken by the different public authorities after one month. A suitable date for the review meeting will be intimated later.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna
Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for

To:

1. VC, DDA.
2. Chairperson, NDMC.
3. CEO, DJB.
4. Commissioner, SDMC.
5. Secretary, PWD.
6. MS, DPCC.
7. RWA, G.K.-I.
8. SH. Rajeev Suri.
9. RWA, Nizamuddin.
10. MC Website.

Related to Chapter 6: Repair and maintenance of Drains

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003**

No. YPMC/2019/ 270

Dated: 18.7.19

Subject: Minutes of the meeting of the Monitoring Committee held on 12-07-2019 at 2.30 pm to discuss the reports on Dr Sen Nursing Home and Sunheri Bagh Drains passing through NDMC area.

The Monitoring Committee (MC) appointed by the Hon'ble National Green Tribunal held a meeting with senior officers of Delhi Jal Board and NDMC to discuss the report on Dr Sen Nursing Home & Sunheri Bagh drains passing through NDMC area.

The list of the officers who attended the meeting is enclosed.

1. 1 On the report submitted by the Expert Member, former Member(WS), DJB reg. flow of sewage in Dr Sen Nursing Home & Sunheri Bagh drains, both passing through NDMC area, the Monitoring Committee issued directions to NDMC for conducting flow measurement and CCTV survey of both the drains before onset of monsoon. But, during the meeting the Chief Engineer, NDMC informed that they had done their survey of both the drains and confirmed that NDMC is not contributing any sewage to these drains. Since, DJB has no sewerage system in Paharganj area, entire sewage is flowing into these drains. The representatives of Delhi Jal Board explained that there is sewerage system in Paharganj and sewage is flowing into sewerage system.
2. The Monitoring Committee handed over the Action Plan of Delhi Jal Board submitted before Hon'ble NGT in 2014 for diverting the flow of sewage in Barapula drain (Short, Medium & Long Term measures) to C.E., Delhi Jal Board. All the works listed in the Action Plan were having some dead lines to be completed. C.E., DJB requested to give some time to respond in this regard.

3. Monitoring Committee informed that Nizamuddin RWA has filed an application about pollution in Barapula drain before the Hon'ble Supreme Court which has been referred to the M.C. C.E., DJB was asked to go through their submission before the court and submit his response so that matter may be heard.

Ditetections issued by the Monitoring Committee:

1. NDMC was directed to measure the flow of sewage at the entry and exit of both the drains of NDMC area to ascertain that there is no sewage is entering from NDMC area. If quantity of sewage at the entry and exit is same, it will imply that sewage is coming from Delhi Jal Board network. If sewage at exit is more than entry point, NDMC will conduct CCTV survey to find the point of entry of sewage from their area. The above survey will be conducted in presence of Mr R S Tyagi, Expert Member. Delhi Jal Board was also directed to confirm that sewage of Paharganj area is going to sewerage network.
2. Delhi Jal Board will submit the latest progress report on the Action Plan submitted by them before the Hon'ble NGT in 2014 as well as the outcome of the works completed by them.
3. Delhi Jal Board was directed to submit the short term and medium term measures to reduce the pollution in Barapula drain so that residents in its vicinity may get some relief.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

1. CEO, DJB.
2. Chairman, NDMC.
3. Sh. V.P.Sharma, CE, DJB
4. Sh. Sanjay Gupta, CE, NDMC

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Related to Chapter 6: Repair and maintenance of Drains

Status of 7 additional drains provided by Monitoring Committee on the report of CPCB

S. No.	Name of Drain	Flow	Source of Discharge	Concerned CE	Action Plan of DJB
1	Sonia Vihar Drain	About 2 MGD	At present there is no sewerage system in Sonia Vihar Group Of Colonies, under the command of Sonia Vihar Drain resulting which discharge from the area is going into the Sonia Vihar Drain. As per the SMP-2031, a scheme of providing sewerage system in Sonia Vihar Group of colonies has been prepared. The present status of the scheme is as under: Sonia Vihar GOC is unsewered area having a population of above 2.34 Lakhs which is proposed with 1 no. STP (7 MGD), 01 nos. WWPS i.e. Rajeev Nagar WWPS (12 MGD) and Sonia Vihar WWPS (4.3 MGD) and 1 no. of lift pumping station (1.5 MGD) near Bedi Gas Agency.	CE(SDW)SE CE(DR)Proj-III	<p>Short Term Measures :</p> <p>The possibility of installation of floating/static aerator at Pond of Sonia Vihar was explored for reduction of pollution load at River Yamuna as per direction of Yamuna Pollution Monitoring Committee appointed by Hon'ble NGT. It has been found that the cost involvement for floating aerators is around Rs.15 Crore excluding the running cost i.e. Electricity charges.</p> <p>In this connection it is to submit that a proposal has also been initiated by the Project Wing for construction of new WWTP including SPSs at Sonia Vihar as a combined scheme of the area. This is expected to be commissioned within 3 to 4 years. After commissioning of WWTP at Sonia Vihar, the floating/static aerators will be scraped which shall not be reusable at new WWTP.</p> <p>Therefore a process through the use of Bio-enzymes has been considered involving much lower cost implication for short term action plan.</p> <p>The tenders for this work are being invited and bids will be received by 31.12.2019. The work will start by 15.01.2020.</p> <p>Medium Term and Long Term: The complete scheme of Sonia Vihar GOC comprising of construction of 7 MGD STP at Sonia Vihar, waste water pumping station at Rajiv Nagar, Sonia Vihar, Lift Pumping Station at Bediabadalongwith laying of internal sewerage system has been finalised and approved by the Board on 22.11.2019. As a Medium Term Measures, work for construction of STP at Sonia Vihar, WWPS at Rajeev Nagar alongwith laying of sewer line in the command of Rajeev Nagar SPS</p>

					will be taken up under Ph-I for which tender are being invited shortly. Work is likely to be completed by December, 2022. As a Long Term Measure, work of construction of WWPS at Sonia Vihar, construction of Bediabad WWPS alongwith laying of internal sewerage system in its command shall be taken up in Ph-II, after allotment of land for construction of WWPS by Police Authority. Completion period will be 30 Months from the date of allotment of land for SPS at Sonia Vihar.
2	Kailash Nagar Drain	About 2 MGD	Discharge is coming this drain through rising main from EDMC's Strom water Pump House near Mahavir Swami Park, Kailash Nagar During dry weather this pum house collects water from ChanderPuri JJ Cluster which is un-sewered and is maintained by DUSIB	CE (Dr.) Project-II	The discharge in drain is coming mainly from JJ Cluster. Matter is being taken up with DUSIB & EDMC. They have been advised regarding setting up of decentralized STP or extending the rising main upto DJB Geeta Colony SPS.
3	Shastri Park Drain	Being accessed	In this drain waste water is coming mainly from BulandMansjid unauthorized colony and nearby habitations.	CE(East)	Sewerage system of Buland Masjid U/A Colony has been made functional on 12.10.19. Various camps have been organized in at site for sanction of sewers connections in this colony. As per recent directions, proposal has been framed for installation of sewer connections in this colony under "Mukhya Mantri Muft Sewer Connection Sanction Yojna" and it is targeted to install all sewer connections by 31.03.2020.
4	Abul Fazal Drain	Being assessed	Unauthorised colonies in Batla House Phase-II area.	CE(Dr) Pr-I	There is no sewerage system on SPS near the drain to trap the waste water. However, the work of providing internal sewer lines in Batla house phase-II has been award. The sewerage of the area which is at present going to this drain will be diverted to the sewerage system by proposed 8 MGD SPS at Batla House and will be treated at Okhla STP. The sewerage system will be laid by Dec, 2021.
5	Jaitpur Drain	Being assessed	Unauthorised colonies of Badarpur area and some discharge is also coming from Faridabad. The drain is outfalling into river yamuna on the	CE(Dr) Pr-I	In Badarpur area, at present no sewerage system exists. It is proposed to provide sewerage network in Badarpur area along with construction of decentralized STP of 10 MGD capacity for which the land is under allocation. The sewer network along

			downstream side of Okhla barrage.		with STP will be completed in 3 years time after allotment of land for STP.
6	Agra Canal near Okhla	These are irrigation canals which emanates from Okhla Barrage and terminates into UP for irrigating the agriculture fields. Hence, there is low action needs to be taken on these canals. However, if the quality of river water is improved in Delhi stretch, the quality of Agra Canal will also improve.			
7	Old Agra canal near Okhla				

Related to Chapter 7- Industrial Pollution

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO.58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI-110003**

No. YPMC /2019/ 271

Date: 22.7.19

Subject: Minutes of the meeting held on 18.7.2019 at 11.30 AM to review the functioning of Online Monitoring System on STPs and CETPs.

The list of the participants who attended the meeting is attached.

The MC had called the meeting to review the following:

- i. Installation and commissioning of Online Monitoring System (OLMS) in all the CETPs/STPs and their connectivity with DPCC & CPCB servers.
 - ii. Whether alerts are being generated as and when the standards are exceeded and whether there is a Standard Operating Procedure (SOP) for attending to such alerts?
 - iii. Whether the data generated through OLMS correspondent with the laboratory results or not and what corrective steps are being taken in the case of variance between laboratory results & OLMS?
 - iv. Progress of public access to the OLMS data.
 - v. Installation of flow meters.
1. Shri Vikas Anand who has recently taken over as the MD, DSIIDC informed that all the 13 CETPs are connected online with DPCC & CPCB servers now. The Naraina CETP which was earlier not connected has since been provided connectivity. On inquiry the MD informed that at present the data generated at CETP which gets transmitted online to DPCC & CPCB servers is not connected to DSIIDC website. The DSIIDC was reminded that even in the earlier meetings they were asked to ensure that all the data generated at the CETP is also available on a real time basis on DSIIDC server so that the DSIIDC as an organization responsible for implementing CETP Act is able to intervene and take

action against the defaulting CETPs. Besides sending alerts to each CETP societies, alerts should also be transmitted to the concerned officers in DSIIDC for intervention.

2. The DJB informed that as against 33 STPs which were connected online earlier, two more STPs at Ghitorni and Yamuna Vihar Phase II have also been provided OLMS, making a total of 35 STPs which have a functional OLMS. Formal request has been made to DPCC and CPCB for registration of 2 new STPs on their server. Once that is done all the 35 STPs will on a real time basis be connected to CPCB & DPCC servers. The CPCB & DPCC were asked to provide this connectivity within a week since formal request has already been made by the DJB in this behalf. A compliance report be sent by the DJB by 31.7.19.
3. On the question of generation of alerts and finalization of SOPs, DJB has already prepared the SOPs and alerts are presently being sent to the Plants- in-charges and other senior officers including CEO. As far as CETPs are concerned, alerts are only going to CETPs societies but not to the officers of DSIIDC since they are not online with the CETPs. The MD was asked to get this operationalized at the earliest and submit a compliance report. While preparing SOPs for handling the alerts, the officers who can take corrective actions and issue directions under CETP Act should necessarily be part of the network receiving alerts, both online and through SMSs. A compliance report be submitted by the DSIIDC on 31.7.19.
4. In the last meeting held in DPCC office on 12.6.19 it was brought out that although data generated by OLMS for the CETPs suggests that the CETPs are functioning properly and meeting the prescribed standards, the laboratory results carried out by DPCC every month show that most of the CETPs are exceeding parameters. The DPCC further informed that there is a variation of 110% in COD, 89% in TSS and 29% in BOD in the CETP at Narela. Situation is not very different at other CETPs. It thus clearly shows that OLMS is not functioning properly. On further inquiry it transpired that there is no system of periodic calibration of OLMS sensors. The CETPs have neither proper laboratories nor technical manpower to carry out analytical tests. This being the position, the main purposes of OLMS gets defeated. The MD was, therefore, asked to

immediately attend to this problem and if the proper testing laboratories are not available with the CETPs, samples should be got tested at the DPCC or CPCB laboratory, subject to DPCC and CPCB agreeing to this. Else, the DSIIDC may arrange for a system being put in place under which the samples are tested at any NAB laboratory. It must be ensured that calibration of all the sensors is done once in 15 days as per the CPCB guidelines and DSIIDC should confirm by 31.7.19 that arrangements for testing of samples in CPCB/DPCC/NABL and calibration of sensors once in 15 days have been put in place.

5. The DJB representative informed that their data generated online in respect of STPs is available online for free public access. The CE, DJB informed that they are in the process of installing display boards in each of the STPs for public information. This will be completed by 15.9.19. The DSIIDC informed that the public access to information on CETPs through their Website will be given once the data from CETPs is received on their Website or their Website linked with DPCC. This is expected to be completed by 31.7.19. Work on putting up display boards have been started and installed at 5 out of 13 CETPS. The remaining work should also be completed expeditiously.
6. Installation of tamper-proof electro-magnetic flow meters is essential to monitor online the quantum of waste water received and treated at the STP/CETPs. Presently only 3 CETPs and 13 STPs have flow meters installed and connected online and transmitting the data on quantum of waste water received and treated at the CETPs/STPS. DSIIDC and the DJB should complete installation of Flow meters at each CETPs/STPs and submit compliance report by 31.8.19.
7. DSIIDC has been carrying out survey of Industries located in 28 clusters and have made substantial progress as reported earlier. Enforcement action has also been taken against CETPs and industries for failing to comply with the directions of DSIIDC or to adhere to the timelines for OLMS. Present status of the survey and enforcement action be submitted to the MC for inclusion in the next Report of the MC to the Tribunal.
8. DSIIDC had earlier reported that they have decided to engage NEERI to upgrade their CETPs with a view to achieving ZLD and also to explore if some of the CETPs can be

retrofitted to be used as STPs due to excess capacity. The MD informed that the MOU for this between the NEERI and DSIIDC is expected to be signed before the end of this month.

Encl.: as above

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

1. CMD, DSIIDC.
2. Member (Dr.), DJB.
3. MS, CPCB.
4. MS, DPCC.

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Related to Chapter 7- Industrial Pollution

OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003

No. YPMC /2019/389

Date: 8/12/19

Subject: Meeting to review functioning of CETPs and enforcement action against industrial pollution to be held on 11.12.19 at 2.30 pm.

The Hon'ble NGT in its order dated 11.09.19 had passed the following directions for control of Industrial pollution and monitoring functioning of CETPs and STPs:

Industrial Pollution:

"DPCC is directed to continue with the survey and monitoring of industries both in confirming and non-confirming areas and take action in accordance with law against polluting units and file report of action three months besides recovery of Environmental Compensation in case of non-compliance Delhi Govt will be liable to pay Rs. 5 lakh per month from 01.01.2020"

Online Monitoring of STPs and CETPs

"Regular calibration of OLMS in Sewage Treatment Plants and CETPs to validate sensor results with lab results to be overseen by DPCC and DJB and report submitted to the Chief Secretary, Delhi and Monitoring Committee on quarterly basis."

The YMC is required to submit a status report as on 31.12.19 to the Hon'ble Tribunal by 31.01.2020. Accordingly, a review meeting was held with the Principal Secretary (E&F) who is also the Chairman, DPCC and Commissioner-cum-MD DSIIDC and other senior officers of the respective departments.

A list of those who attended the meeting is attached.

Keeping in view the order of the Tribunal, the YMC flagged following issues for discussion:-

1. Status of survey carried out by the joint survey team of DSIIDC & DPCC in 28 Industrial clusters.

2. Status of the survey and enforcement action against Industries operating in non-conforming/residential areas.
3. The Enforcement action taken by DSIIDC/DPCC against polluting industries and present status thereof.
4. Status of the study assigned to NEERI to review the functioning of CETPs and to make recommendations for their up-gradation of CETPs, wherever required.
5. Status of implementation of study of TSDf for handling of hazardous waste.
6. Review functioning of OLMS, its calibration and overall effectiveness in monitoring the functioning of CETPs.

Survey and enforcement action against polluting industries:

The MD, DSIIDC informed that the joint survey team of DSIIDC and DPCC have completed a survey of 31985 industries located in 17 industrial clusters connected to 13 CETPs. The survey team has, in addition, undertaken survey of 4192 industries located in 10 industrial clusters which do not have CETPs and are mostly non-water consuming industries. The survey in respect of 11th industrial estate, namely, Tilak Nagar, is underway and is expected to be completed shortly. The industries department/DSIIDC has also taken action against the industries not connected to CETPs or which were otherwise violating environmental norms. In all 1966 industries in 17 industrial estates which have CETPs have been proceeded against and Environmental Compensation of Rs. 5.635 crores recovered. Additionally 38 units in 10 industrial clusters which are not serviced by CETPs have been served show cause notices for levy of EC of Rs. 19 lakhs of which Rs. 9 lakhs from 18 units have so far been realised. The Chairman DPCC stated that in addition to the action taken by DSIIDC, the DPCC has also taken action under the Water Act of 1974 against 81 Industries and issued closure orders.

On query by YMC as to whether industries which have been issued closure notices have actually been closed, the representative of DPCC informed that based on the survey carried out subsequently it has been confirmed that the industries have actually been closed. There are also some industries which have approached the Courts against the orders of DPCC.

Since action against industries have been taken both by DSIIDC/industries department under the CETP Act of 2002 and by the DPCC under the Water Act of 1974, the EP Act of 1985 besides levying EC under the orders of Honble Tribunal, YMC wanted a consolidated picture of

the enforcement action taken by both the department. The Chairman DPCC agreed to consolidate the figure of enforcement action taken against the violating industries and submit a report as on 31.12.19 to the YMC.

Industries in non-conforming areas

The MD, DSIIDC informed that the survey and enforcement action against the industries operating in non-conforming/residential area is being taken by DMCs and there are joint survey teams constituted for the purpose, DSIIDC does not monitor this activity on its own. In fact there is a Committee under the chairmanship of Chief Secretary, which submits a periodic report to the Hon'ble Supreme Court. Additionally a Committee headed by Justice (Retd) Pratibha Rani is also monitoring the functioning of industries in non-conforming/residential areas and the enforcement action by the DMCs is being monitored by that committee. The YMC asked the MD, DSIIDC to submit the brief status on the action taken for closure of such industries so that the Hon'ble Tribunal could be apprised the status as on 31.12.19. This is being suggested in view of the fact that NGT orders cover industries both in conforming and non-conforming areas.

Functioning of CETPs and Study by NEERI

There are 13 CETPs catering to 17 Industrial Clusters. As per the test reports received from DPCC for the month of October 2019, only two out of 13 CETPs, namely, GTK and Narayana CETPs are meeting the parameters of the effluent standards prescribed at SNo. 55 (Schedule- I) of the Environment Protection Rules 1986. Neither the individual CETPs nor the DSIIDC has its own laboratory and, therefore, DSIIDC gets the sample testing done through the DPCC, once in a month. Against a total installed capacity of 212 MLD for all the CETPs, only 79 MLD of industrial effluent is received and treated at the 13 CETPs. Most of the CETPs are thus functioning much below their installed capacities. There is no proper system of sludge handling and even the hazardous sludge is being stored within the premises of the CETPs for years together. Except 1-2 MLD of treated waste water the rest of about 78 MLD of treated waste water is released in to the drains. In order to comprehensively review the functioning of the CETPs, sludge management, up-gradation, retrofitting for use as STPs and achieving ZLD, a study has been assigned to NEERI for all the 13 CETPs. MD DSIIDC informed that though the study period is 2 years efforts will be made to have the timelines compressed. The MD also informed the YMC

that the study by NEERI will be done sequentially and the report in respect of the 1st CETP will be received in about 3 months time. The YMC also asked the MD to concurrently identify the sources of funding for the up-gradation that NEERI study may suggest and for this purpose DSIIDC could approach the CPCB as well as DPCC who have funds available for the purpose of environmental restoration. However the DSIIDC needs to pursue the matter both with CPCB and DPCC and if necessary the YMC could also make suitable recommendation in this behalf to the Tribunal in its next report. The Chairman DPCC, who was present in the meeting, also stated that the matter will be examined and a view taken in the matter and a status as on 31.12.19 on the progress in locating sources of funding be furnished to the YMC by first week of January 2019.

Hazardous Waste Management Facility

MD, DSIIDC stated that setting up of hazardous waste management facility which was pending in the High Court for the last 2-3 years has since been cleared by the court and the concessioners has been issued the Work Orders. It is expected to take 1 year to complete the work of study for the facility although there is an order of the Tribunal directing DSIIDC to commission TSDF facility by 30.6.2020. Since there are clear order of the Tribunal directing DSIIDC to commission this facility by 30.6.2020 MD, DSIIDC should expedite action on this and keep the YMC informed of the progress achieved.

On Line Monitoring System (OLMS)

MD, DSIIDC informed that all the 13 CETPs have functional OLMS. None of the CETPs or the DSIIDC has their own laboratory and therefore DSIIDC gets the manual testing done through the DPCC, which is done once a month. YMC had in the last meeting held on 27.11.19 directed that DSIIDC should have its own dedicated laboratory or have a tie-up with some other NABL-accredited laboratory for the purpose of testing of samples and calibration. DPCC being a regulatory body has the oversight function and is expected to undertake independent checking as and when considered necessary.

It was also noticed that there are a lot of short comings in the calibration statement of CETPs submitted by DSIIDC wherein it is not seen that the difference between the OLMS figure and the laboratory test result sometimes exceeds 50%. Likewise in some cases difference between lab figures and those of OLMS is more after calibration than the pre- calibration figures. These inconsistencies need to be explained. The YMC would like the DPCC to revisit the

protocol for undertaking calibration. If required the DPCC should approach CPCB for the purpose of technical audit of the protocol followed for calibration so that the discrepancies that has been observed are removed. Separately MC has sent a mail to CPCB and DPCC pointing out the inconsistencies and shortcomings in the data on CETP's performance furnished by the DPCC for the month of October. Calibration in the present form defeats the very purpose of monitoring and will therefore not be of any use.

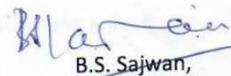
Directions

The directions once again are summarised as under.

1. Status of survey of 28 industrial clusters carried out pursuant to the directions of the YMC be submitted by 7.1.20. The report, however, should correspond to the status as on 31.12.19.
2. The Status of survey conducted should be separately given for the period 1.8.18 to 31.8.19 and 1.9.19 to 31.12.19.
3. Enforcement action taken against industries under the CETP Act, Water Act and EP Act including levy of EC and its realisation should be compiled and submitted in consolidated manner by the Chairman, DPCC. This report should include action taken both by the Industries Department/DSIIDC as well as DPCC and submitted to the YMC by 7.1.20.
4. Status report on the action taken against the industries in non-conforming/residential areas based on the status report submitted to the Hon'ble Supreme Court be also submitted to YMC for inclusion in its next report.
5. DSIIDC should coordinate with DPCC and CPCB and other agencies to identify source of funding for up-gradation of the CETPs. This has been recommended keeping in view the fact that up-gradation of CETPs does not get delayed till the recommendations on all the CETPS are received from NEERI which could upto about 2 years.
6. Status of implementation of setting up hazardous waste management facility as on 31.12.19 be submitted by 7.1.20.
7. The CPCB should undertake a technical audit of the protocol followed for calibration of CETPs/STPs in the light of the inconsistencies/discrepancies found

in the calibration done by DPCC. A separate email has already been sent to Chairman DPCC, MS, DPCC and MS, CPCB on 12.12.19 for compliance.


Shailaja Chandra,
Member,
Monitoring Committee for Yamuna


B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

1. Commissioner (Industries)
2. MD, DSIIDC
3. Chairman CPCB
4. Chairman DPCC

Copy To: MS, CPCB

Enclosure: as above

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Related to Chapter 10 – Use of Treated Waste Water

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA 8 INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2019/ 395

Dated: 31 /12/19

Subject: Minutes of the meeting held on 19.12.19, 26.12.19 and 30.12.19 regarding sealing of bore-wells in parks

Lists of those who attended the meetings are attached.

All District Magistrates had been called to attend the meeting in connection with sealing of bore-wells in parks. However their presence was also used to review enforcement action under the Septage Management Regulations 2018. YMC took up both matters with the District Magistrates and representatives of New Delhi Municipal Council, Delhi Development Authority, Delhi Municipal Corporations, Public Works Department and Delhi Jal Board.

Enforcement action related to Septage Management Regulations

District wise position of impounding vehicles and imposition of penalty was not readily available and DM North said he would co-ordinate and provide a consolidated response. The response has been received and shows that only two districts have initiated any action and the officers are according low or no priority to this as the table below bears out:

S. No.	District	Details of challans
1.	New Delhi	During inspection two numbers of tankers at NH 8 near MahipalPur petrol pump were found discharging Septic Wastage in the sewer line. Two challans of both vehicles were issued by the inspector, SDMC. Two Challans of Rs. 50,000/- each were also issued.
2.	South	12 unauthorised septage tanks seized and penalty imposed.

During the meeting the following issues came up:-

- That the involvement of the traffic police is essential for ensuring that enforcement action is effective. For this purpose YMC would take up with Special Commissioner of Police (Traffic) and bring to his notice that it is necessary for DCP Traffic to coordinate with the District Magistrates. The requirement was that the representative of traffic police should attend the monthly meetings on septage management chaired by the DMs.
- The DJB representative placed on record that there are already 86 notified Sewage Pumping Stations (SPS's) and the requirement is for septage to be deposited at the designated points only. A suggestion was made that although the Septage Management Regulations only refer to registered tractors/trolleys carrying Septage to the SPS, in the interest of depositing the septage only as designated sites, unregistered contractors who have not been registered so far could be given access to SPS' to enable them to deposit the septage which is otherwise going into the storm water drains, water bodies and forest areas. This ultimately flows into the larger drains or into the river or alternately seeps into the ground and pollutes the ground water. Sh. D.K Vaishya Chief Engineer DJB said that there will not be any problem in accepting septage from unregistered vehicles.
- Connected with this suggestion it was highlighted that the objective of the Septage Management Regulations was not confined to collection of septage alone but to also to see that the unregistered operators who were employing casual laborers without any safety equipment, masks, gloves etc. and subjecting the labor to hazardous conditions had to be eliminated. Therefore the operation of such unregistered vehicles carrying septage is a public health hazard and risky for those who undertake the job. To give them license to deposit the septage in the SPSs' would give legitimacy to their operations and would derail enforcement action. Now that the Regulations have issued It was essential that DJB expedites the scheme of Government contracted Trucks/vehicles to pick up the septage which had already received wide publicity. If unregistered collectors are to be in the interregnum permitted it should have approval of the competent agency even as a temporary measure. The Chief Engineer DJB said

that the scheme of trucks collecting the septage was to become operational in December 2019 but has now been postponed to January 2020. This requires to be fast-tracked to prevent environmental damage and risk to contract laborers operating the unregistered tractor trolleys as apart from being an environmental hazard it was a hazard for human health.

- The District Magistrates also brought out that although monthly meeting are being held, no representative from DJB attends. The DJB representative is the Member Secretary of the committee but there is no ownership for the work of septage collection or enforcement. The result is that the District Magistrates are unable to take necessary measures as expected of them. In the last meeting held with CEO DJB he had stated that District Magistrates were not holding the meetings. CE DJB Mr Vaishya present in the meeting was not able to explain as to why the DJB Engineers were not attending the meeting called by the DMs. The YMC directed the CE to ensure that the DJB officers attend the meetings convened by the District Magistrates and also directed that the meetings must be held without fail.

Whereas the DM of South East District had held 5 monthly meetings, some like New Delhi, South West, West District held 4 monthly meetings, North East, Central District held 3 monthly meeting, North East Shahdara and South District held 2 monthly meeting and North West District held only 1 monthly meeting. The absence of the Member Secretary (from DJB) in several cases showed poor ownership for implementing the regulations. In future if there is no representative from DJB joins fully prepared or the representation is inadequate, the DMs should inform the CEO DJB and the name of the Member Secretary who absented may also be communicated to the YMC.

- Data received from DJB also shows that there are districts like East, South, Central, Shahdara and North where the collection of septage has been zero. There is clearly a need for better co-ordination, review and analysis within DJB and only blaming the DMs does not represent the full story.

Use of Treated waste Water in Parks owned by Government Agencies:

The progress on using treated waste water showed that the progress on NGT's order to see that parks in within a radius of 5 Kms of an STP was very slow. Action on this direction of NGT had only progressed partially. It was only in respect of the parks of East DMC and North DMC that some movement at all has taken place as follows.

East DMC

Sh. R.K Singh Director of Horticulture informed that they will use treated waste water in 444 parks from January 2020 onwards. This will result in a closure of 430 tube-wells. 43 tube-wells had already been closed after switching over to treated waste water from tankers making a total of 473 closed tube-wells. A scheme had been prepared for covering 1338 parks by laying pipelines up-to DJB's STPs located at Kondli and Yamuna Vihar but due to non-availability of funds, East DMC was not in a position to lay pipelines. However a request has already been sent by Commissioner East DMC to DDA for approval of scheme and providing funds under UDF.

South DMC

South DMC informed that they will use treated waste water in 626 parks out of 6400 parks, which will result in 153 tubewells getting closed. They had already closed 28 tube-wells.

North DMC

Sh. D.N. Sharma Deputy Director (HORT) informed that they are going to close 99 tube-wells in 401 parks, (out of 6095 total number of parks) from January 2020 onwards by hiring water tanks.

New Delhi Municipal Committee

NDMC representative informed that they had acute shortage of water and were unable to use the treated waste water of DJB. They were willing to take water from any location in the vicinity of Sarojini Nagar, Panchkuiyan Road, Mandir Marg, Chankyapuri and Shankar Road. The DJB responded by saying that they already have an STP with good quality surplus treated waste water near Delhi Secretariat. The NDMC representative was asked to meet the DJB representative in this regard and report to the YMC. The Chief Engineer informed the MC that 36 parks are within the 5 Km radius of STP and work can start from there. He also informed that they have surveyed all the land owning institutions within NDMC area and are making a plan for either seeing that they lift treated waste water or setup their own STP.

DDA

DDA representative informed that they have already closed 35 borewells in Dwarka and West Delhi and are undertaking to close 30 more borewells in another 3 months time all over Delhi. Principal Commissioner Horticulture DDA stated that there are 780 parks under DDA out of which 129 parks fall within the 5 KM radius of STP. Further, considering the size of DDA parks which are quite large these would require 100 if not 1000 tankers per day to ply to supply treated waste of STP through this method. The Principal Commissioner DDA said that they are taking up this issue and he would review it and get back with their action plan for lifting/using treated waste water at present:

- i. First priority is being given to 20 parks out of 129 parks. The YMC stated that if they are not going to use treated waste water using tankers, and in the absence of making any alternative arrangement, this will be deemed as a violation of NGT's orders which the YMC will have to report to the NGT in its next report. The Principal Commissioner, who has joined only recently promised that the DDA would reexamine this and inform the YMC soon. He was asked to do it by 31.12.19.
- ii. DDA was asked to consider setting up smaller STPs for different individual parks by tapping drains. Being much smaller STPs it could be executed as a turnkey project within 4 months. The Principal Commissioner said that he will relook at this issue and come up in a month with an appropriate plan for the entire parks of DDA. This must be done by January 15th so that the status is reported to the NGT in the next report of the YMC.

Forests

The YMC realised that the forest areas were huge and the requirement which the DJB has put forward for providing pipelines for supply of treated waste water had been budgeted by WAPCOS at Rs. 512 Crores. In a separate meeting held with the Forest Department on 30.12.19, Shri Nisheet Saxena, Conservator of Forests informed that there are in all 52 functional borewells presently being operated by the Forest Department of which 17 are in the South, 23 in the West and 12 in the North Divisions. Each borewell draws about 30 lac litres to 300 lac litres of ground water per annum depending upon the requirement in a particular area. In addition 154 tankers are being used by the FD in South Division alone which transport borewell water but the location of such bore wells and whether they are authorized is not known. He also assured that it should be possible to switch over to use of treated waste

transported through these tankers within one month. Similar steps can be taken in other Divisions too. He was asked to have matter discussed with the DJB and also internally within the Department and prepare a blue print for use of treated waste water with timelines within a week and submit to the MC by 10.1.20 positively.

It was brought up in the meeting that the DMRC and Railways are also bulk consumers and they are using their own treated water. It is for DJB to verify actual sources of supply and give a redo which would be placed before NGT. This inspection and correlation with DJB's own and other water sources should also be done in December 2019 as this was told to DJB on earlier occasions only.

Enforcement by DMs

Ms Tanvi Garg, District Magistrate, New Delhi District said that the DMs could only start sealing action after alternative arrangements were made for supply of treated water. Only a list of private bore wells which were illegal had been received but no such list had been received for Government agencies and parks. As such no enforcement against Government agencies was possible until the supply of treated waste water was first in place as there would be an outcry.

YMC is of the view that notices could be sent to agencies /Departments using borewell water as a starting point asking them to switch over to the use of treated water within certain timeframe so as to compel them to take action and create infrastructure for using treated waste water. Else the response is likely to remain lackadaisical. More than letters, one – on-one meeting should be held agency wise to pin them down to a figure and a timeline to start collection of treated water.

Urgent Need for Policy on Use of Treated Waste Water Understood by All Stake holders.

It was apparent during the meeting that the Nodal Department DJB was not pulling its weight and use of treated waste water as a subject appeared to have no ownership. The Chief Engineer concerned Shri Vaishya was unprepared and when the YMC sought data the CE only kept referring to a huge compendium drawn up by the organisation but had no progress to report thereafter. DJB was apparently not working in tandem with the DMCs and other

organisations or with the DMs. Other Departments and Agencies were clueless about the overall plans and their roles within that. The meetings to work out demand and supply of treated waste water must be undertaken with each agency individually and a report given as has been done with Forest Department. This report would be given Agency wise to NGT and as the senior most officer in charge of the subject, CE Mr Vaishya had to organize the implementation of NGT's directions.

Illegal Borewells in private properties:

It is understood that the illegal bore -wells dug by private farm houses and commercial properties had been identified and some 4000 bore-wells have been sealed and reports are being furnished to various Courts. Since a separate NGT appointed committee is in charge of this the YMC is not pursuing the private establishments. However the DJB and DMs must have an idea of the alternate sources of water which were being used by these farm houses and commercial properties and there is a need for proactive coordination between DJB and Divisional Commissioner's office and DDA if needed.

Piped Water supply to Government Agency Parks

The Government Departments and Agencies are numerous and all that DJB seems to have done is to draw up agency-wise cost estimates of piping from the nearest STP to the point of discharge. The number of parks in a radius of 5 Kms of an STP was reported as being more than 11,000. In that case DJB is required to have a better macro idea of the alternatives to be adopted park-wise and Agency wise. The ultimate objective is to stop ground water extraction and encourage conservation of ground water and use water which has been treated at a very heavy cost and is being thrown back into the river so far only a letter appears to have been written asking for payment for laying pipelines to be made.

Need for Disaggregated Data

DJB should have segregated the data into:

- I. Parks where the tanker alternative is feasible and warranted. If some DMCs have started the process DJB is required to pursue with others which is not being done from the responses received in the meeting.

- II. Parks where piping is a better solution which have to be divided by agency and selected on the basis of data on large scale extraction of ground water. DJB should identify the Blocks where the ground water table is critically low and focus on parks and other activities being carried out there. This information is available with CGWB.
- III. Parks where small decentralized STPs is the best alternative and to start directing the authorities to set up their own treatment.
- IV. A list of commercially/ privately owned properties whose illegal bore wells were sealed/ are in the process of being sealed with corresponding information on alternate supply points being used by these establishments and a plan to see that they use treated waste water mandatorily.

Meeting Held on 26.12.19 Regarding Treated Waste Water

Macro-level picture of use of treated waste water

The use of treated waste water for Horticulture purpose in the parks was found to be moving at a very slow pace. The MC asked the DJB representatives for macro level data and it was indicated that if all parks in a radius of 5 km used treated waste water 21 MGD would be utilized. If all parks regardless of distance were covered approximately 40 MGD would be used.

Whereas two (2DMCs), namely the EDMC and North DMC, had started collection of the water, the rest of the DMCs and other stake holders like DDA seemed to have no ownership for this strategy despite NGT's orders. Sh. Vaishya Chief Engineer DJB should provide the YMC an overview of efforts made agency wise and state why the orders of NGT were being negated.

Permanent Solution and WAPCOS Assessment of need for Piped System to Carry Treated waste water to Parks / Forest areas.

The CEO DJB should hold bilateral meetings with those agencies being asked to pay for laying pipelines to start the process as it is only on paper. MC will review progress to see if there is ownership and the feasibility has been gone into as everything cannot hinge on WAPCOS which hasn't, for example, gone into budget availability or the cost-effectiveness of such piping which is huge in some cases (e.g. Forests.). **This should come before 10.1.2020.**

DJB Action Plan for Utilization of 341 MGD treated water.

The meeting on 27.12.19 was a sequel to this meeting held by DJB under CE Mr Vaishya. The officers that represented DJB namely Sh. D. K. Vaishya, Chief Engineer (SDW) SE, DJB, Sh. M. K Jain, Chief Engineer (Dr.) Pr. II and Shri B.P Sarswat, SE (Dr. (Pr) IV referred to the Action Plan which had been filed before NGT through an affidavit in April 2019 in which the total utilization of 341 MGD treated effluent had been planned. It had referred to the involvement of the Governments of UP and Haryana and the need for approval of Upper Yamuna River Board (UYRB). The idea was firstly, to carry treated water from Coronation STP to Palla and release it into the river to be eventually used as raw water for the Water treatment plant at Wazirabad and secondly, to supply treated waste water to the States for irrigation purposes and in lieu to secure fresh raw water from their share of water at Hathanikund. The MC had referred to this in its report dated 16.1.19 including the Annexure C-10/1 of that report. The former CEO DJB and Member Drainage had both referred to this plan but the MC's meeting only revealed that there had been no movement on this between April and December 2019 as UYRB has not conveyed approval. It was not clear whether even notional agreement of the states of UP and Haryana had been obtained. However a payment of Rs70 lakhs had been made to UP for having a consultancy report generated. The action plan for large scale use of treated waste water did not seem to be a priority.

The YMC will hold a meeting with CGWB and the representative of UYRB and DJB to determine how best this can be taken forward. There was scope for commercial/industrial/farmhouses to use this water .The progress of the Action plan submitted to NGT in April 2019, will be monitored besides the status of water use by private properties and its source.

No identification of borewells sunk by different Government agencies has been prepared by DJB and nor are DMs pursuing that. DJB and Divisional Commissioner should have a joint plan to get the larger Government bodies to take treated waste water in lieu of ground water extraction.

The CGWB has a clear idea of the ground water table in different blocks. Out of 34 blocks 22 are categorized as over exploited, 2 as critical and 7 as semi-critical. Coordination with CGWB is, therefore, required to decide where the use of treated waste water is non-negotiable because of critical depletion of water table. The strategies for mandatory rain water harvesting and deterrent action against the tanker mafia is needed to be dovetailed.

A meeting to review all these matters will be held in mid-2020 but by 10.1.20 the MC may be given a comprehensive report on the issues above along with supporting data.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

1. CEO, DJB
2. VC, DDA,
3. Chairperson, NDMC.
4. Divisional Commissioner, GNCTD.
5. Commissioner, South DMC.
6. Commissioner, North DMC.
7. Commissioner, East DMC.
8. PCCF Forest Department, GNCTD
9. All District Magistrates.

CC: OSD to Chief Secretary for information of CS.

Related to Chapter 11 – Idol Immersion

By Speed Post



DELHI POLLUTION CONTROL COMMITTEE DEPARTMENT
OF ENVIRONMENT, GOVT. OF NCT OF DELHI 5th FLOOR, ISBT
BUILDING, KASHMERE GATE, DELHI-110006

visit us at : <http://dpcc.delhigovt.nic.in>

F. No. DPCC/Plg/IM/2006/2779-2792

Dated: 05/07/2019

Subject: Revised directions u/s 5 of the Environment (Protection) Act, 1986 read along with Water (Prevention and Control of Pollution) Act, 1974 for the immersion of idols on festive occasions (central act, 29 of 1986).

Whereas, on festive occasions such as Ganesh Chaturthi, Durga Puja, Sarswati Puja etc., it has been a tradition to immerse idols in water bodies like rivers, lakes, ponds, wells etc. Consequent pollution of such water bodies has been a matter of concern and there have been public interest litigations as well. In addition to silting, toxic chemicals used in making idols tend to reach out and pose serious problems of water pollution. Studies carried out to assess deterioration in water quality due to idol immersion reveal deterioration of water quality in respect to Conductivity, Bio-chemical Oxygen Demand and Heavy Metal Concentration.

And whereas, Central Pollution Control Board has issued the Guidelines for immersion of idols and other puja materials reaching in the water bodies during festival.

And whereas, the chemical paints, colours and dyes applied on such PoP idols contain hazardous chemicals/ elements like Mercury, Zinc Oxide, Chromium, Lead, Cadmium etc. which causes harmful effects to aquatic life, which when consumed by humans may cause cancer and other diseases including respiratory ailments, skin

infections etc. The PoP also contains chemicals / elements like Gypsum, Sulphur, Potassium and Magnesium which causes harmful effects to aquatic life (flora & fauna) and in turn causes harmful health effects, if such aquatic life are consumed by human beings.

And whereas, Hon'ble National Green Tribunal (NGT) is monitoring various activities causing pollution in River Yamuna through O.A. No. 6 of 2012 entitled, "Manoj Mishra Vs U.O.I. and Ors." And O.A. No. 300 entitled, "Manoj Mishra and Madhu Bhandhari Vs U.O.I. and Ors" had pronounced various directions w.r.t. any type of visarjan in River Yamuna vide orders dated 13.01.2015 and 16.09.2015. The orders prohibit throwing pooja material or any other material like food-grain, oil, etc into river Yamuna except on the designated site. Any person who is found disobeying this direction shall be liable to pay compensation of Rs. 5,000/- on the "Polluter Pays" Principle.

And whereas, as per the provisions Section 15 of Environmental Protection Act, 1986 "Whoever fails to comply with or contravenes any of the provisions of this Act, or the rules made or orders or directions issued there under, shall, in respect of each such failure or contravention, be punishable with imprisonment for a term which may extend to five years with fine which may extend to one lakh rupees, or with both, and in case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention".

And Whereas, inspite of directions not to use Plaster of Paris in making idols, several Plaster of Paris (PoP) idols and other non-recommended materials are being used in making Idols/ are being imported from neighboring states for sale in Delhi during the Festivals.

Now therefore, by virtue of the powers conferred under Section 5 of the Environment (Protection) Act, 1986 vide Notification No. S.O. 881 (E) dated 22/09/1988, by the Ministry of Environment & Forests (MoEF), Government of India; Delhi Pollution Control Committee hereby issues following directions:

- A. **General Directions for Idol Makers/ Sellers of Idols / Puja Samitis making Idols in-situ:**
1. Idols be made only from natural materials as described in the holy scriptures. Use of traditional clay for idol is permitted. Uses of Baked clay, plaster of paris, etc. in idol making are hereby prohibited.
 2. Painting of Idols be discouraged. In case idols are to be painted, water soluble and non toxic natural dyes only be used. Use of toxic and non-biodegradable chemical dyes for painting idols is strictly prohibited.
- B. **General Directions for Pooja Samitis/General Public:**

1. Worship material like flowers, decorating material (made of paper and plastic) etc. be removed before immersion of idols and be put at designated places so that the same may be recycled, composted or disposed of in an environmental safe manner.
2. Make small size idols not more than 5 feet in height so that those can be immersed in ponds to be prepared at designated sites.
3. Immerse idols only at the designated places identified by Govt. of NCT of Delhi/ Concerned Municipal Corporation of Delhi.
4. Separate bins/receptacles have been provided on the ingress and egress of all the Yamuna Bridges for placing Pooja Samagri and flowers separately and no pooja material be disposed directly in the river.

C. General Directions for Local Bodies/Authorities:

1. Bio-degradable materials to be collected separately for recycling or composting.
2. Non-biodegradable materials to be collected separately for disposal in sanitary landfills.
3. Public be educated on ill effects of immersion in the holy water bodies through mass awareness programme.
4. The 'Idol Immersion Points' shall be cordoned off and barricaded. Synthetic liner may be placed in the bottom, well in advance. The said liner shall be removed on the completion of immersion ceremony so that remains of idols would be brought to the bank. Bamboo and wooden logs, if any would be reused. Clay etc. may be taken to sanitary land fill for disposal.
5. Within 48 hours of the immersion of idols, the left over material at idol immersion points on the banks of rivers, lakes, ponds, etc. be collected by the local bodies for disposal as per the Guidelines issued by CPCB.
6. In case of immersion of idols in rivers and lakes, arrangement may be made for construction of temporary confined ponds with earthen bunds for the purpose of immersion of idols. After the completion of immersion, supernatant water may be allowed to flow in river, pond and lake, as the case may be, after checking for colour and turbidity. Lime may be added in temporary confined ponds.
7. In case of immersion of idols in lakes or ponds, all the flowers, leaves and artificial ornaments of idols be removed and idols may be immersed into a corner of pond using removable synthetic liners in the bottom. Post immersion, liners may be taken out along with remains of idols and lime be added to the pond water for settling the solids. De-sludging of the pond be undertaken afterwards.
8. Temporary ponds having earthen bunds should be created as idol immersion spots. Removable synthetic liner may be placed well in advance in bottom of pond. The said liner along with remains of idols be removed from the point within 48 hours of

immersion of idols.

9. All the Municipal bodies, Delhi Police shall check the entry of vehicles / Goods carriers entering the Delhi carrying such PoP idols as its cargo, prevent the entry of the vehicle and attach the vehicle / goods carrier and hand it over to the Police Authorities at the nearest Police Check Post / Police Station.

All the Municipal bodies shall also issue relevant directions to all Zonal Offices to identify locations of illegal sale of PoP idols and shall take necessary action against such illegal sale and also to take action against illegal idol making being done without registration with Revenue Department or is done on unauthorized land.

10. The Delhi Police shall issue relevant directions to the Police Officers at the Police Check Post / Police Station, to take appropriate action against the offenders violating these directions.

11. All the Municipal bodies, shall ensure that all permanent and temporary licensed establishments in Delhi do not conduct any sale of PoP idols during Festivals.

12. District Magistrate shall enforce the above directions by issuing relevant instructions to the concerned officials for monitoring and enforcement of the directions. If any person is violating the above directions then Rs 5000/- as environment compensation be levied, collected and deposited with DPCC

13. All local Bodies/Revenue department shall give wide publicity for mass awareness.

All the concerned agencies are also directed to submit Action Taken Report every fortnight w.e.f 1st July, 2019 to Delhi Pollution Control Committee.

Sd/-

(Sanjeev Khirwar)

Chairman

To,

1. The Commissioner, North Delhi Municipal Corporation, 4th Floor, Civic Centre, Minto Road, New Delhi-110002.
2. The Commissioner, North Delhi Municipal Corporation, 4th Floor, Civic Centre, Minto Road, New Delhi-110002.
3. The Commissioner, East Delhi Municipal Corporation, 419, Udyog Sadan, Patparganj Industrial Area, Patparganj, Delhi-110092
4. The Commissioner, South Delhi Municipal Corporation, 9th Floor, Civic Centre, Minto

Road, New Delhi-110002.

5. The Chairman, New Delhi Municipal Council, Palika Kendra, Parliament Street, New Delhi-110001
6. The Chief Executive Officer, Office of Cantonment Board, Sadar Bazar, Delhi Cantt, Delhi-110010.
7. The Divisional Commissioner, Government of NCT of Delhi, 5, Sham Nath Marg, Delhi-110 054.
8. Commissioner of Transport, Transport Department, Govt. of NCT of Delhi, 5/9, Under Hill Road, Delhi-110054.
9. The Commissioner of Police, Delhi Police, 2nd Floor, MSO Building, Police Headquarter, ITO, Delhi – 110002
10. The Commissioner of Industry, Department of Industry, Udyog Sadan, 419 FIE, Patparganj, Delhi- 110092
11. All Pooja Samitis (as per list)

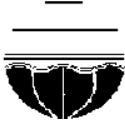
Copy to:

1. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
2. PS to Secretary (Environment) Cum Chairman, DPCC- for kind information to Chairman, DPCC please.
3. Director (Env.)- for uploading at website of Dept of Env, NCT of Delhi
4. Incharge (IT), DPCC- for uploading at website of DPCC.

Sd/-

(Arun Mishra)

Member Secretary



DELHI POLLUTION CONTROL COMMITTEE DEPARTMENT OF
ENVIRONMENT, GOVT. OF NCT OF DELHI 5th FLOOR, ISBT BUILDING,
KASHMERE GATE, DELHI-110006

visit us at : <http://dpcc.delhigovt.nic.in>

F. No. DPCC/Plg/IM/2006/2930-2943

Dated: 28/08/2019

CORRIGENDUM

Whereas, Delhi Pollution Control Committee issued Directions u/s 5 of Environment Protection Act, 1986 to the Idol makers, sellers of Idol, Puja Samitis, general public and local bodies / authorities for the immersion of Idols for the festive occasions vide Letter No. DPCC/Plg/IM/2006/ 2779-2792 dated 05.07.2019 in compliance to the order of Hon'ble National Green Tribunal.

And whereas, Puja Samitis have approached various forums to reconsider the size of idols which are to be immersed at the designated sites as per clause 2 of Direction B with the assurance that all other directions issued vide above letter shall be adhered to.

And whereas, the matter was examined by a committee headed by Director, Environment, Govt. of NCT of Delhi in a meeting dated 22.08.2019 and the committee taking into consideration the submission of Puja Samitis that 5 feet height would restrict the glimpse of Maa Durga during the large gatherings, recommended for an increase in the size of idol for immersion, provided all other clauses of the Directions are complied rigorously.

And whereas, the competent authority in Delhi Pollution Control Committee, taking into account the sentiments expressed in the representations and after due deliberation has decided to amend the clause 2 of the Direction B issued vide Letter No. DPCC/Plg/IM/2006/ 2779-2792 dated 05.07.2019 as under:

“Make small size idols as far as possible preferably not more than 5 feet in height and shall be immersed

at the designated sites in consultation with concerned District Magistrate.

For the idol of size more than 5 feet concerned Pooja Samiti to ensure that all pollution norms are strictly adhere to and its immersion is done in artificial ponds under overall supervision of the area District Magistrate."

Sd/-

Member Secretary

To,

1. The Commissioner, North Delhi Municipal Corporation, 4th Floor, Civic Centre, Minto Road, New Delhi-110002.
2. The Commissioner, East Delhi Municipal Corporation, 419, Udyog Sadan, Patparganj Industrial Area, Patparganj, Delhi-110092.
3. The Commissioner, South Delhi Municipal Corporation, 9th Floor, Civic Centre, Minto Road, New Delhi-110002
4. The Chairman, New Delhi Municipal Council, Palika Kendra, Parliament Street, New Delhi-110001
5. The Chief Executive Officer, Office of Cantonment Board, Sadar Bazar, Delhi Cantt, Delhi-110010.
6. The Divisional Commissioner, Government of NCT of Delhi, 5, Sham Nath Marg, Delhi-110054.
7. Commissioner of Transport, Transport Department, Govt. of NCT of Delhi, 5/9, Under Hill Road, Delhi-110054.
8. The Commissioner of Police, Delhi Police, 2nd Floor, MSO Building, Police Headquarter, ITO, Delhi – 110002
9. The Commissioner of Industry, Department of Industry, Udyog Sadan, 419 FIE, Patparganj, Delhi- 110092
10. All Pooja Samitis (as per list)

Copy to:

1. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
2. PS to Secretary (Environment) Cum Chairman, DPCC- for kind information to Chairman, DPCC please.
3. Director (Env.)- for uploading at website of Dept of Env, NCT of Delhi
4. Incharge (IT), DPCC- for uploading at website of DPCC.

Related to Chapter – 12 : State of Haryana and Pollution of the Yamuna



HARYANA STATE POLLUTION CONTROL BOARD
C-11, SECTOR-6, PANCHKULA
Website – www.hspcb.gov.in
E-Mail: hspcbho@gmail.com
Ph: 0172-2577870-873

Sub: Proceedings of meeting held on 10.01.2020 at 4:30 PM with the Principal River Yamuna Monitoring Committee with Chief Secretary, Haryana at Haryana Bhawan, New Delhi to review the status of actions taken regarding the directions of Hon'ble NGT issued on 11.09.2019 in matter of OA No. 6 of 2012- Manoj Mishra Vs UOI.

Kindly refer to the subject noted above.

In this connection, I have been directed to find enclose herewith the proceedings of meeting held on 10.01.2020 at 4:30 PM with the Principal River Yamuna Monitoring Committee with Chief Secretary, Haryana at Haryana Bhawan, New Delhi to review the status of actions taken regarding the directions of Hon'ble NGT issued on 11.09.2019 in matter of OA No. 6 of 2012- Manoj Mishra Vs UOI for your information and necessary action please.

DA/ As above.

Sr. Environment Engineer (HQ)
For Member Secretary

No. HSPCB/WC-271-44-II/173-183

Dated: 21-01-2020

To

1. Additional Chief Secretary, Env. Deptt., Haryana, Chandigarh.
2. Additional Chief Secretary, PHED, Haryana, Chandigarh.
3. Additional Chief Secretary, Irrigation Department, Haryana, Chandigarh.
4. Additional Chief Secretary, Industries Deptt., Haryana, Chandigarh.
5. Principal Secretary, Urban Local Bodies Deptt., Haryana, Chandigarh.
6. Principal Secretary, Development and Panchayats Deptt, Haryana, Chandigarh.
7. Principal Secretary, Town and Country Planning Deptt., Chandigarh.
8. Chief Executive Officer, GMDA, Gurugram.
9. MD, HSIIDC, Sector-6, Panchkula
10. Dr. PKMK, Das, Member Monitoring Committee, Haryana
11. Sh. YK Garg, Member Monitoring Committee, Haryana

Sr. Environment Engineer (HQ)
For Member Secretary

Endst. No. HSPCB/WC 271-44-II/184-185

Dated: 21-01-2020

A copy of the above is forwarded to the following for information please:-

1. Smt. Shalaja Chandra, Member, River Yamuna Monitoring Committee, New Delhi
2. Sh. BS Sajwan, Member, River Yamuna Monitoring Committee, New Delhi

Sr. Environment Engineer (HQ)
For Member Secretary

Endst. No. HSPCB/WR-271-Vol-II/186-188

Dated: 21-01-2020

A copy of the above is forwarded to the following for information please:-

1. PS to Chief Secretary, Haryana.
2. PS to Chairman, HSPCB
3. PA to Member Secretary, HSPCB


Sr. Environment Engineer (HQ)
For Member Secretary

Draft Proceedings of the meeting of RYMC held at 1630 Hrs on 10.1.2020 at Haryana Bhawan, New Delhi with officers of Haryana Govt. to review the status of compliance of directions of Hon'ble NGT in matter of OA No. 6/2012 (Manoj Mishra Vs UOI & Others)

A meeting was held by the Members of the Principal River Yamuna Monitoring Committee (RYMC) at 1630 Hrs on 10.01.2020 with the team Senior Officers of Government of Haryana, headed by Smt Keshi Anand Arora, IAS, Chief Secretary, Government of Haryana, at Haryana Bhawan, New Delhi, to review the status of compliance of the directions of Hon'ble NGT in matter of OA No. 6 of 2012 (in the matter of Manoj Mishra Vs UOI & Others) and to discuss the issues raised by RYMC in this regard. The list of participants is enclosed as **Annexure**.

After briefly explaining the issues raised by RYMC and the directions of NGT to all participants, RYMC pointed out specific issues relating to quantum of effluent generated in different cities, status of STPs / CETPs, their existing capacities, targeted capacities through proposed projects and the gap observed in the exercise. After a detailed discussion on individual towns of concern, RYMC also made the following observations.

- The Drain No. 2 is carrying Domestic and Industrial Effluent to River Yamuna from **Panipat** Town. Sewage is not reaching to the ^{Sewerage} Treatment Plants. The work of laying of sewage will not adhere to the target date given by the Hon'ble NGT.
- Industrial Effluent from the Textile Cluster of **Panipat** is not reaching to the newly installed CETPs. The old CETPs needs upgradation. Untreated Industrial Effluent continues to be discharge till 31.12.2020.
- The Drain No. 6 is carrying Domestic and Industrial Effluent to River Yamuna from **Sonipat** Town. The Trunk Sewer connecting both the STPs not functioning thereby, Domestic Effluent not reaching to the STPs. Untreated Domestic Effluent being discharged through Drain No. 6 which is reaching to River Yamuna through Supplementary Drain.

- The 04 CETPs installed in **Sonipat** Town need modification and capacity augmentation.
- Industries operating in the non conforming areas of **Kundli Township** on Delhi Haryana Border are discharging effluent directly to the adjoining drains. Urgent action is required.
- Domestic, Industrial effluent from **Rohtak and Bahadurgarh** Towns via Mungeshpur Drain, KBC Drain and Drain No. 8 reaching Najafgarh Drain. The existing STPs and CETPs needs to be upgraded and new STPs and CETPs required to be installed.
- Discharge of Untreated Effluent to Storm Water Drains Leg-I, Leg-II and Leg-III (Badshapur Drain) of **Gurugram** is still continuing. New STPs and CETPs are required to be installed immediately to treat the additional discharge.
- 300 MLD Untreated Domestic and Industrial effluent from **Faridabad Town** is being discharged to River Yamuna through Budia Nalaha and Gouchi Drain. Existing STPs are not working. Expeditious action for installation of new STPs and CETPs is required by the Urban Local Bodies Department and Haryana State Industrial and Infrastructure Development Corporation respectively.
- Untreated Industrial Discharge from small illegal Utensils Manufacturing Units in non conforming industrial areas of **Yamuna Nagar- Jagadhri Township** reaching River Yamuna through Dhanura Escape. No action initiated by the Regulatory Authority (Haryana State Pollution Control Board) and Executive Departments.
- The RYMC Haryana is not receiving monthly progress report from line departments except PHED.

PS, ULBD briefly explained the status of STPs in Faridabad, Sonapat and Gurugram and the future course of action. He also explained the interim measures proposed to be taken by ULBD for meeting out the requirement during the proposed period. Similarly, ACS, PHED, ACS Industries and PS TCP briefly explained the status of their jurisdiction along with the proposed action plans. The following decisions were taken after a detailed discussion with all the participants.

1. As the State Government has to submit the details of status and progress of implementation to NGT and RYMC by 15.01.2020, all stakeholder Departments were directed to immediately send their status report on the progress made in compliance of the directions of NGT and observations of RYMC, latest by 13.01.2020 to HSPCB, and the same will be submitted to CS on 14.01.2020 after compilation and the report will be sent by due date, i.e., 15.01.2020.
2. As far as the operation of non-conforming units of Yamunanagar and other Districts of Haryana is concerned, it was informed by Industries Department that a survey is underway for finalizing the status of the area (on whether it is possible to declare it as industrial or not). Chief Secretary advised that Industries Department may hold a meeting with all concerned Departments / stakeholders on 13.01.2020 and update the progress, drawing a definite course of action and timeline and submit the progress for incorporating the same in the main reply.
3. The ULBD was directed to send the report on status / progress on different actions taken at its level for incorporation in the main report. Further, ULBD was advised to include the details of quantum and mechanism of septage disposed by its field units for record purposes in the report.
4. Monthwise execution plan for all activities of construction of STPs/CETPs, laying of sewer lines and other activities be submitted to RYMC by all Departments concerned, for easy monitoring of the progress. They were also requested to designate the responsible officers for the activities concerned.
5. Municipal Corporations of Panipat, Faridabad and Gurugram were advised to provide the details of their plans with monthly targets for sewage, CETPs & STPs.
6. All stakeholder Departments were advised to send the monthly report against the targets indicated to RYMC, with the copy to HSPCB, by 5th of every month.
7. RYMC's observations on functional deficiencies of CETPs were taken note of by Industries Department and HSIIDC. It was further decided that a joint inspection of CETPs by officers of HSIIDC, HSVP, HSPCB and Expert Members of RYMC will be

carried out for which operation, HSPCB shall be the coordinating agency.

8. Administrative Secretaries concerned were advised to verify the compliances of various actions and their progress in field during their visits.
9. Regarding the issue of office space for RYMC Expert Members, it was decided that Municipal Commissioner, Gurugram shall follow up and ensure a suitable arrangement for the same. Similarly, their grievances regarding HRA may be addressed by Environment Department through HSPCB, it was decided.

Meeting ended with thanks to all the participants.

-000-

Annexure

List of participants of the meeting of RYMC held at 1630 Hrs on 10.1.2020 at Haryana Bhawan, New Delhi with officers of Haryana Govt. to review the status of compliance of directions of Hon'ble NGT in matter of OA No. 6/2012 (Manoj Mishra Vs UOI & Others).

Sr. No.	Name/ Designation/ Department
	Members of Monitoring Committee
1.	Smt. Shailaja Chandra, IAS, Chief Secretary (Retd.), Delhi, Member, River Yamuna Monitoring Committee, New Delhi
2.	Sh. B S Sanjwan, IFS, Former Member NGT, Member, River Yamuna Monitoring Committee, New Delhi
3.	Dr. PKMK Das, Member, Haryana Yamuna Monitoring Committee
4.	Sh. Y K Garg, Member, Haryana Yamuna Monitoring Committee
	Officers from Haryana Govt.
1.	Smt. Keshni Anand Arora, IAS, Chief Secretary, Haryana, Chandigarh
2.	Sh. VS Kundu, IAS, CEO, GMDA, Gurugram
3.	Smt. Dheera Khandelwal, IAS, ACS, Environment Department, Haryana, Chandigarh
4.	Sh. Devender Singh, IAS, ACS, PHED, Haryana, Chandigarh
5.	Sh. TVSN Prasad, IAS, ACS, Industries and Finance Department, Haryana, Chandigarh (through VC)
6.	Sh. AK Singh, IAS, PS, Town & Country Planning Department, Haryana, Chandigarh (through VC)
7.	Sh V Uma Shankar, IAS, PS, ULBD, Haryana, Chandigarh
8.	Sh Ashok Kheterpal, Chairman, HSPCB
9.	ShS. Narayanan, IFS, Member Secretary, HSPCB
10.	Sh Saket Kumar, IAS, Director, Industries Department, Haryana, Chandigarh (through VC)
11.	Sh Yash Garg, IAS, Commissioner, Municipal Corporation, Faridabad
12.	Sh Vinay Pratap Singh, IAS, Commissioner, Municipal Corporation, Gurugram
13.	Sh. Manpal Singh, EIC, PHED, Panchkula
14.	Sh. Mahavir Singh, EIC, HSIIDC, Panchkula
15.	Sh. Om Prakash, HCS, Commissioner, Municipal Corporation, Panipat
16.	Sh. Ashok Kumar Bansal, HCS, Commissioner, Municipal

	Corporation, Sonapat
17.	Sh. PK Garg, GM, HSIIDC, Panchkula (through VC)
18.	Sh. Shankar Jindal, CE, Panchayat Raj Department, Haryana, Chandigarh
19.	Sh. VK Kalra, CE, HSVP, Panchkula (through VC)
20.	Sh. KK Verma, Chief Engineer, PHED, Panchkula
21.	Sh. Lalit Arora, CE (Infra-II) GMDA, Gurugram
22.	Sh. TI. Sharma Chief Engineer, Municipal Corporation, Faridabad
23.	Sh. OP Goyal, GM (IA), HSIIDC, Panchkula
24.	Sh. JP Singh, SEE, HSPCB, Panchkula
25.	Sh. Rajesh Bansal, SE (Infra-II) GMDA, Gurugram
26.	Sh. Sandeep Bhardwaj, Assistant Professor, HIRD, Development & Panchayat Department,
27.	Sh. Naveen, XEN, Municipal Corporation, Panipat
28.	Sh. Radheshyam, XEN, Municipal Corporation, Sonapat
29.	Sh. Ashok Rawat, XEN, Municipal Corporation, Panipat
30.	Sh. NK Sawhney, SBM, Municipal Corporation, Panipat

Related to Chapter – 12 : State of Haryana and Pollution of the
Yamuna



HARYANA STATE POLLUTION CONTROL BOARD
C-11, SECTOR-6, PANCHKULA
Ph-2577870-73 E-mail: hspcbaircell@gmail.com

No. HSPCB/SSC/2020/ 1262

Dated: 24/01/20

To

Dr. Ajit Dua,
Chief Executive Officer,
Punjab Biotechnology Incubator,
SCO 7-8, Ph-V, Mohali.

Sub: Analysis of samples STPs and CETPs.

In continuation to this office letter no. HSPCB/WC/10170 dated 12.12.2019 and your email dated 19.12.2019 on the subject cited above.

The information desired by you vide email referred above were sent to you vide email dated 23.01.2020.

In view of the above, I have been directed by the competent authority to request you to coordinate with the River Yamuna Monitoring Committee Haryana constituted in matter of OA No. 6/2012- Manoj Mishra Vs UOI & Ors. In collection / analysis of samples of STPs / CETPs in Yamuna catchment area to verify the efficacy of the operation of STPs / CETPs as per list enclosed.

Terms of reference:-

1. Traveling expenses will be paid has actual.
2. Cost of analysis will be paid has per prescribed rates of the institute.
3. You will coordinate with members of Yamuna Monitoring Committee as per their schedule.
4. All collection material / bottles will be provided by the institute.
5. Analysis report of samples will be released within 10 days.

DA/ As above.

Senior Scientist (HQ)
for Member Secretary

32	Panipat	30 MLD STP at Barshat Road Panipat (HSVP) (Existing)	30	HSVP	Existing
33	Panipat	0.8 MLD STP at Sector 6, Panipat	0.8	HSVP	Existing
34	Rohtak	Sunaria Road, Rohtak	40	PHED	Existing
35	Rohtak	Singhpura, Rohtak	14	PHED	Existing
36	Rohtak	PGL, Rohtak	19	PHED	Existing
37	Rohtak	Sampla	4	PHED	Existing
38	Rohtak	Kalansur	3.5	PHED	Existing
39	Rohtak	Maham	5	PHED	Existing
40	Rohtak	Singhpura, Rohtak	10	PHED	Existing but upgradation is in progress by ULB
41	Rohtak	10 MLD (HSVP) at Rohtak (Existing)	10	HSVP	Existing
42	Sonapat	Gohana	8.3	PHED	Existing
43	Sonapat	Gohana	3	PHED	Existing
44	Sonapat	Kharikhoda	4.5	PHED	Existing
45	Sonapat	Gansur	7	PHED	Existing
46	Sonapat	Kakroi Road	25	ULB	Existing
47	Sonapat	Rathdane Road	30	ULB	Existing
48	Sonapat	7.5 MLD STP RGECC at Sonapat	7.5	HSVP	Existing
49	Yamuna Nagar	Parwalu	24	PHED	Existing
50	Yamuna Nagar	Radsur Road	20	PHED	Existing
51	Yamuna Nagar	Baddi Majra	10	PHED	Existing
52	Yamuna Nagar	Chachharuli	3	PHED	Existing
53	Yamuna Nagar	Radsur	3.5	PHED	Existing

Annexure – C-12/3

**Related to Chapter – 12 : State of Haryana and Pollution of the
Yamuna**

Annexure C-12/3						
Detail of New STPs Proposed to be completed beyond 31.12.2020						
Sr.No.	Name of the district	Name of the town/city	Department	Capacity (MLD)	Date completion	Remarks
1	Gurugram	Jhazgarh	GMDA	10	31.12.2023	Proposed - DPR under preparation
2	Gurugram	Dhanwapur	GMDA	50	31.12.2022	Proposed - DPR under preparation
3	Faridabad	Mirjapur, Faridabad	ULB	80	31.12.2021	Proposed - NIT under preparation
4	Faridabad	Partapgarh, Faridabad	ULB	100	31.12.2021	Proposed - NIT under preparation
5	Sonepat	Murthal	ULB	3	31.03.2021	Proposed - Tender has been invited
6	Rohtak	Peerbodhi	ULB	15	30.06.2021	Work Under Progress
7	Faridabad	Sector 21	ULB	10	31.07.2021	Work Under Progress

Related to Chapter – 12 : State of Haryana and Pollution of the Yamuna

Action plan of under proposal CETPs

Sr. No.	Name of the District	Name of the town/ city	Deptt.	Proposed capacity (MLD)	Dated of completion
1	Yamunanagar	IE Manakpur Phase I & II	HSI IDC	3	31.07.2021
2	Jhajjar	MIE, Bahadurgarh	HSI IDC	10	31.10.2021
3	Gurugram	Sector- 37 Gurugram	HSI IDC	9	31.12.2021
4	Gurugram	Sector- 18 Gurugram	HSI IDC	1.5	31.12.2021
5	Gurugram	IDC, Gurugram	HSI IDC	0.75	31.12.2021
6	Faridabad	Badshahpur Faridabad	HSI IDC	15	31.12.2021
7	Faridabad	Partapgarh Faridabad	HSI IDC	50	31.12.2021
8	Faridabad	Mirzapur Faridabad	HSI IDC	25	31.12.2021
9	Yamuna Nagar	Jagadhri Town	HSI IDC	20	31.12.2021
10	Yamuna Nagar	Yamuna Nagar	HSI IDC	10	31.12.2021

Related to Chapter 13: State of Uttar Pradesh and Pollution of the Yamuna

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2020/ 399

Date: 7/1/2020

Subject: Record note of discussion held with senior officers of UP State concerning pollution in the drains in and around Ghaziabad discharging into the Shahdara drain leading to River Yamuna

The purpose of the meeting was to review the progress of directions of NGT with special reference to pollution caused by sewage and industrial discharge and steps being taken to upgrade and set up new STPs, maintain the sewerage system and introduce bio/phytoremediation wherever needed. The presence of the senior most officers had been sought because in previous meetings no officer was willing to make any commitment on the upcoming plans and time lines as directed by NGT. The presence of the Principal Secretary Urban Development and the Principal Secretary,(Environment & Forests) who was also Chairman of the UPPCB was welcomed.

At the outset the Yamuna Monitoring Committee highlighted the following issues:

1. The recent report of CPCB, the statutory regulator, in respect of the 3 drains at Sahibabad, Loni and Indirapuri which showed high discharge of effluent into the Shahdara drain.
2. The fact that the report of the CPCB and the Expert engaged by the YMC Sh. RS Tyagi had shown the presence of both industrial effluent and sewage and the need for upgrading the STPs to correspond to the discharge.
3. Steps taken by the UPPCB to contain the problem.
4. Future plans, milestones and timelines in respect of NGT's orders.

The meeting started with CPCB giving an overall view of the presence of the pollutants referring both to sewage and Industrial effluent. Thereafter, the Principal Secretary (UD), Government of Uttar Pradesh informed the YMC that they had engaged M/s VA TECH WABAG LTD. to take responsibility for the entire

operation, maintenance and management of the sewerage treatment system in Ghaziabad district. The contract has been made operational from 16.12.19 and would continue for 10 years. As a result of the measure, the diffusion of responsibility due to multiplicity of agencies which was holding back the progress, has been overcome. The major component of the work assigned to this agency insofar as the specific area being monitored by YMC is concerned comprised of the following:

- a. Operation and maintenance of all STPs and main pumping stations and intermediate pumping stations.
- b. Major replacement of the system (STPs)
- c. Maintenance of sewer networks and rising mains.
- d. Establishing online 24x7 public complaints redressal system to attend and dispose the complaints received from the public within stipulated period.(such as overflow of sewer, manhole cleaning and repair etc.)

The representative of the SMCG, UP Sh. R. K. Chaudhary was made nodally in-charge of feeding the YMC with full details which can be incorporated in the report which should be supplied by 10.1.2020.

Urban Development/Septage Management

1. The Principal Secretary (UD) on a query by the YMC on the target date by which sewage flow in the Sahibabad drain will be completed, trapped and treated in STPs, stated that with the appointment of M/s VA TECH WABAG LTD. and upgradation at Loni which is under way, it is expected that in about six months' time all the sewage flowing from the State of UP into Sahibabad drain will be trapped and treated.
2. On the implementation of Septage Management, the Principal Secretary stated that septage management plan has already been approved for Loni and Sahibabad areas and the actual commencement of the septage collection and treatment should happen by Nov. 2020. Such a long time line is not acceptable to YMC and must be compressed and a revised timeline informed to the YMC for incorporating in the report to be submitted by YMC by 31.1.2020.
3. On phyto/bio remediation Principal Secretary (UD) informed that the State of UP had undertaken bio/phytoremediation work in certain areas during Kumbh Mela at Prayagraj in technical collaboration with NEERI. The results have been encouraging and the state has

submitted a detailed proposal for all the drains which are unlikely to be connected to the STP, for funding through NMCG. The YMC was also informed that in some of the drains the work of phytoremediation was initiated and the same has been continued even after the Kumbh Mela and that there is some improvement in the quality of waste water effluent in the drain. YMC said that the phyto remediation had been ordered by NGT and at least for the 3 drains under discussion the State should work out the timelines for execution. The general response given covering an omnibus project and funding by NMCG goes beyond the specific scope of what the YMC was expected to monitor which related specifically to pollution in the Sahibabad, Loni and Indirapuri drains at Ghaziabad. The timelines for abatement of pollution in these drains may be given to the YMC by 15.1.2020 as otherwise the observations on continuing pollution based on the CPCB report will be included in the report.

4. On a query by YMC, the Regional Officer of UPPCB informed that in the absence of a laboratory to test metals and heavy metals, UPPCB is only testing 4 parameters, namely, pH, TSS, BOD and COD in the CETPs installed at Ghaziabad. This is highly unsatisfactory considering that there are as many as 30 parameters at serial number 55 of Environment (Protection) Rules 1986 which are required to be monitored by the Pollution Control Boards who had to regularly assess the performance of CETPs. YMC asked the CPCB to carry out a technical audit on testing protocol for the UPPCB.

Pollution caused by Industries in the Ghaziabad area.

In respect of this particular area the Principal Secretary (Industries) stated that there were 236 industries in conforming areas (88 in Loni area and 148 in Sahibabad area) and 331 in the non-conforming area (295 in Loni area and 36 in Sahibabad area.) The action as follows has been taken:

Conforming Areas

- a. An Environmental compensation of Rs. 2, 48, 75,016 have been imposed against industries in conforming areas (EC of Rs. 45, 75,016 against 6 defaulting industries in Loni area since August 2019 and Rs.2.03 crore on 27 industries in Sahibabad area since June 2019.
- Show cause notices have been to 20 units and closure order against 4 units have been issued since June 2019.

Non-conforming Area

- a. 295 illegal industries have either been closed down/demolished and a fine of Rs. 1, 34,500 has been imposed in Loni area since August 2019.
- b. A joint team of district administration, electricity, land owning agency and UPPCB has already closed/sealed 36 such industries in Sahibabad area since August 2019.

The CPCB was asked to check on the facts provided from the point of view of control of effluent discharge and send a report by 15.1.2020.

Irrigation and Flood Department –ATN on last meeting

The Engineer- in- Chief Irrigation UP, on a query by the YMC, informed that the State Finance Department has concurred in the proposal to transfer Rs 35 crores for the Floodplain development to DDA and soon approval of the State government will be obtained and communicated to the DDA. YMC asked the E-in-C to report the progress in about a fortnight so as to inform the progress to the NGT by 31.1.2020.

This is a brief aid memoir only and a comprehensive report will be given in January Report of the YMC. The material given above needs to be supplemented with up- to- date information to avoid old data being transmitted to NGT in respect of Ghaziabad region.

This should be done before 15.1.2020

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna
To:

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

1. Principal Secretary (UD), U.P.
2. Principal Secretary (E&F), U.P
3. Principal Secretary (Industries), U.P

Copy to: 1. Chief Secretary, UP
2. CEO, DJB
3. Website

Related to Chapter 13: State of Uttar Pradesh and Pollution of the Yamuna

Compliance of Hon'ble NGT Order dated 11.09.2019 in O.A. No: 06/2012 (Manoj Mishra Vs. UoI)

General Status:

The population of Gaziabad is approx. 22 lacs, which is supposed to generate sewage of 264 MLD (with assumption of 150 lpcd water consumption and 80% generation of sewage). There are eight STPs with installed capacity of 490 MLD. The sewage being received is around 400 MLD (This may be because of drain tapping and industrial effluents before and after treatment reaching STPs). The requirement of sewer network is 2336 kilo meters against which 1950 kilo meter has been laid and 51 kilo meter is under implementation. The balance network of 386 kilo meter needs to be taken up on priority.

Compliance Status and Time Line

S.N	Directions	Action Taken	Time Line
1	To undertake bio-remediation / phytoremediation / or any other remediation measure of drains from 1 st . January, 2020 till STPs are set up.	<p>Hon'ble NGT has issued similar directions on 07.08.2019 for drains on Ganga and its tributaries in O.A. No: 200, 2014 (M.C. Mehta Vs. UoI). The NMCG has also been asked to bear 50% of environmental compensation in case of non-compliance.</p> <p>River Ganga and its 11 tributaries are covered by the notification of 2016 on Ganga.</p> <p>The State has prepared a DPR in collaboration with the NEERI-CSIR and submitted the proposal for taking up bio-remediation on 459 drains and bringing them under REENUE technology of NEERI. The proposal has O&M for five years and covering these drains under treatment for a longer term as it may not be feasible to have STP on each of them.</p> <p>The proposal was submitted on 10.10. 2019 and reminder sent by Chief Secretary on 04.11.2019. The State has also sent a letter on 19.12.2019 asking for sanction of project and funding 50% of the requirement with a commitment that remaining 50% will be borne by the State. The NMCG has not yet sanctioned the project. These three drains are part of that project.</p>	The remediation work can begin after 45 days of sanction of the project by the NMCG.

2	<p>The Principal Secretaries of Environment and Forests and Urban Development to give a short term and long term plan to control flow of sewage from U.P. into the river Yamuna at Gaziabad with time lines for execution.</p>	<p>The State has sanctioned projects for Rs.587.24 cr. on improving sewerage management in Gaziabad, Modinagar and Loni with funding for sewage house connections under AMRUT, which provides for last mile connectivity for better utilization of STPs.</p> <p>Three (Gaziabad, Modi Nagar and Loni) Projects of Faecal Sludge and Septage Treatment has also been sanctioned which are under implementation. The State has issued Septage Management Policy in October, 2019 which envisages coverage of entire urban areas by 2023.</p> <p>The State has also created an arrangement for Long Term Operation and Management of STPs, IPS, network and house connections in an integrated manner of having One City One Operator. M/s. V.A Tech Wabag, Chennai has been awarded the contract of O&M in Gaziabad Zone for 10 years. Assets has been handed over to them on 16.12.2019. This has been completed after one and half long years of process of bidding and approvals.</p> <p>A project for laying new effluent pipeline has been sanctioned for Rs. 10 cr. and contract awarded for its execution. This will enable running of STPs at Indrapuram on full capacity.</p> <p>A project of Rs. 126 cr. has also been sanctioned for real time on-line monitoring of all STPs / IPSs through SCADA. The same is under tendering.</p>	<p>The short term works will be completed by June, 2020. (Correcting leakages, making Loni STP fully functional and laying of new effluent pipeline)</p> <p>The Long term works will be completed by November, 2020. (Septage management projects, new SPS and completion of on-going projects)</p> <p>The new STP of 60 MLD will be completed in 24 months of its sanction by the NMCG.</p>
3	Complete Tapping of Sahibabad Drain	This will be done with completion of project of laying new effluent pipeline and new IPS at Vijay Park	November, 2020
4	Tapping and treatment of Indrapuri and Banthala Drain	New STP of 60 MLD has been proposed. Sanction from NMCG is awaited.	In 24 months after sanction.
5	Sewage going into Sahibabad from scwered area (4 points)	These sewage will be taken to the STP	April, 2020

	Repair of all leakages in sewerlines in Gaziabad and Loni	Will be taken up by V.A. Tech Wabag on priority and completed.	June, 2020
	Up-gradation of STPs to meet the norms	The STPs are designed for 30/50 norm for BOD/TSS. The new norm of 10 / 20 of BOD/TSS has not yet been notified by the Ministry of Environment, Forests and Climate Change. In absence of that notification it will be difficult to fund the up-gradation or change the conditions in ongoing projects.	In six months after notification of new norms by the MoEFCC.


 (Manoj Kumar Singh)
 Principal Secretary
 Department of Urban Development
 Government of Uttar Pradesh

Related to Chapter 13: State of Uttar Pradesh and Pollution of the Yamuna

Compliance Status of Hon'ble NGT order dated 11-09-2019 in the matter of O.A. No. 6/2012 (Yamuna Pollution Matter) Manoj Misra Vs. UOI.

State of Uttar Pradesh has prepared an Action Plan for River Yamuna from Gautam budh Nagar to Prayagraj where it eventually meets River Ganga. The action points dealing with issues of Sewage management, Industrial waste management, Ground water management and Monitoring dealt in Yamuna Action Plan of State of Uttar Pradesh, has been duly approved by Central Pollution Control Board and is being adopted in totality and followed with perseverance with regards to Sahibabad drain and Indirapuri drain in Ghaziabad as well so as to reduce and minimize environmental impact on receiving water streams. In compliance of Hon'ble NGT order dated 12.07.2019 a Consolidated Action Taken report dated 10.08.2019 was submitted to Monitoring Committee constituted by Hon'ble National Green Tribunal. In compliance to Hon'ble NGT order dated 23.08.2019, the consolidated report along with specific timelines was submitted to ASG nominated by Hon'ble NGT vide U.P. Government letter no. NGT-440/81-7-2019-01(Parya)/2015 dated 02-09-2019.

Hon'ble Tribunal order dated 11-09-2019:-

Hon'ble National Green Tribunal in its order dated 11-09-2019 in aforementioned matter has passed issue wise directions in respect of State of Uttar Pradesh. In compliance to Hon'ble Tribunal Order dated 11-09-2019 a meeting was convened by Principal Secretary, Environment, Forest and Climate Change, Government of Uttar Pradesh on 04-10-2019 to update status of compliances related to various directions of Hon'ble Tribunal passed vide orders in the captioned matter. Chief Secretary, Government of Uttar Pradesh has also reviewed the Status of Compliances on 17-10-2019 with Additional Chief Secretaries/Principal Secretaries and other officers of concerned Departments for ensuring timely action according to the directions of Hon'ble Tribunal. Directions related to Industrial Waste Management and their compliance status is given below :-

B. Industrial Waste Management:-

S.no.	Direction	Concerning Department	Action Taken
1.	<i>State PCB to evolve a mechanism to recover the EC from those refusing to pay.</i>	<i>UPPCB</i>	U.P. Pollution Control Board has made a policy for not renewing the Consent to Operate until EC has been recovered. UPPCB is issuing the Show Cause notices against the defaulters for the payment of Environmental Compensation. The procedure for recovery of arrears of land revenue by way of attachment of properties is also proposed. Presently since June, 2019 27 industries have been imposed a total Environmental Compensation of Rs. 2.03 Cr. out of which EC of Rs 63.98 Lakh have been realized by the State Board.
2.	<i>Complete inventory of industries both in conforming and non- conforming areas be prepared by State PCB within one month.</i>	<i>UPPCB, UPSIDC & District Level Committee</i>	<p>Regular survey of conforming industrial areas and non- conforming areas has been carried out by UPPCB along with District Administration and concerned departments.</p> <p>➤ Non-conforming area:-</p> <p>Loni area:- Since August, 2019 a total of 295 illegal industries were found operating in residential areas of Loni since August, 2019. All such industries have been either closed down/demolished and a fine of Rs. 1,34,500/- has been imposed onsite against illegal industries.</p> <p>Sahibabad area:- U.P Jal Nigam has done mapping of unauthorized activities in residential areas of Sahibabad. A joint team of District Administration, Electricity, Land owning agency and UPPCB has already closed/sealed 36 such industries in Sahibabad area Since August, 2019.</p> <p>➤ Conforming area:-</p> <p>Loni area:- Survey of Industrial areas of Loni has been carried out by UPPCB with District Administration Since August, 2019. During the survey, besides 88 water polluting industries identified earlier, 09 new</p>

			<p>industries were identified not having valid documents, hence the industries were sealed by District Administration. Out of 88 identified industries in industrial areas, 05 industries were sealed by district administration for not having requisite documents. A total EC of Rs. 45,75,016/- has been imposed against 06 defaulting industries in the area.</p> <p>Sahibabad area:- Extensive survey has been carried out in conforming areas of Sahibabad Industrial area as well, however no new water polluting industry has been identified in the conforming areas besides 148 industries identified earlier. Since June, 2019, Show Cause Notices under section 33(A) of Water (Prevention and Control of Pollution) Act 1974 against 20 units and Closure Order against 04 units have been issued. A total Environmental Compensation of Rs. 2.03 Crores has been imposed against 27 industries since June, 2019.</p>
3.	<i>Report be submitted on performance of CETPs and ETPs of industries by UPSIDC and PCB.</i>	<i>UPPCB & UPSIDC</i>	<p>There is no CETP in the catchment of River Yamuna. Regular inspections of ETPs are being carried out and necessary action is being taken up against the defaulter industries whose ETPs are not performing satisfactorily as given below:-</p> <p>Loni area:- Survey of Industrial areas of Loni has been carried out by UPPCB with District Administration since August 2019. During the survey, besides 88 water polluting industries identified earlier, 09 new industries were identified not having valid documents, hence the industries were sealed by District Administration. Out of 88 identified industries in industrial areas, 05 industries were sealed by district administration for not having requisite documents. Action under section 33(A) of Water (Prevention and Control of Pollution) Act 1974 is being taken against 06 defaulting industries in Loni area.</p> <p>Sahibabad area:- Extensive survey have been carried out in conforming areas of Sahibabad Industrial area as well, however no new water polluting industry has been identified in the conforming areas besides 148</p>

			<p>industries identified earlier.</p> <p>Since June, 2019, Show Cause Notices under section 33(A) of Water (Prevention and Control of Pollution) Act 1974 against 20 units and Closure Order against 04 units have been issued. A total Environmental Compensation of Rs. 2.03 Crores have been imposed against 27 industries. Details of action taken is enclosed.</p>
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Related to Chapter 14: Creating Public Awareness Through Information Dissemination Strategies

Annexure III

31


GOVERNMENT OF NATIONAL CAPITAL TERRITORY DELHI
DIRECTORATE OF EDUCATION: SCHOOL BRANCH
OLD SECRETARIAT: DELHI-110054

Dated 16/5/19

No. DE.23 (654)/Sch.Br /2019/163

Subject: Action Plan for cleanliness of river Yamuna.

As we are well aware that rivers are one of the very important resources for mankind and play a pivotal role in life of flora and fauna. In past few decades, the Yamuna has become much polluted and water quality has become very poor due to the discharge of untreated, domestic and industrial effluent. Therefore cleanliness of the river Yamuna needs immediate attention through spreading awareness and conducting various activities, as part of an Initiative by Monitoring Committee of Yamuna.

In view of the above, the following detailed action plan for "Cleanliness of Yamuna River" has been prepared to be implemented in schools of DoE, GNCT of Delhi.

S.No.	Activity	Month	Details Of Activity	Remarks
1.	Training of all HOS, Eco Club In-charges and NSS program officers of DOE schools regarding waste management, sewage management, recycling of waste etc.	May- June	All HOS, Eco Club Incharges and NSS Programme Officers of all DOE schools	SCERT, DJB and Dep. of Environment & Industries with NGOs will develop a training Module to impart training.
2.	Introduction and awareness about Action Plan at School Level to cleanliness on Yamuna river with special emphasis on drainage waste and industrial waste	July- August	All schools of DOE	<p>1. Awareness session during Morning Assembly by HOS, Teachers, Eco Club Incharges and Students. Relevant Slides downloaded from Yamuna Monitoring Committee site will be shown to students.</p> <p>2. Demonstration in Classroom during teaching periods of Social Science and S.U.P.W, Gen Studies etc. of how Drainage and Industrial Waste cause pollution and can be treated.</p> <p>3. Environment Plodge will be taken by Students</p>

P. Singh

				and Teachers on first Monday of every month in the Assembly.
3	Organisation of various activities discussed in training at school level e.g Industrial and Drainage waste management, recycling of waste, sewage management etc.	July- August	All schools of DOE (Using SCERT Training module developed by SCERT, DJB, Environment, DOE)	All the activities discussed during the training will be conducted in schools by Eco Club Incharges, Trainee Teachers and NSS Programme Officers.
4	Awareness Programmes at community level through Cleanliness drives, Information Campaigns about Drainage and Industrial Waste etc.	July- August	HOS may include SMC members for this.	<ol style="list-style-type: none"> 1. HOS, Students, Teachers and SMC members will create Awareness in the community through PTMs in schools. Students will demonstrate activities learnt in schools in community. 2. Making up of Eco friendly Idols/effigies for immersion during the festivals. 3. Segregated system of waste management will be demonstrated with special emphasis on Non bio degradable wastes.
5	Organisation of Cleanliness Drives by NSS Students and NSS In-Charge of schools, HOS, SMC members and community people at the bank of Yamuna, adopting a particular area of Yamuna River, for showing how Drainage and Industrial Waste affect Yamuna.	September	District Wise in all 12 Districts NSS Students and Officer In-Charge.	<ol style="list-style-type: none"> 1. District Wise in all 12 Districts by NSS Students and NSS In-Charge. Area around river Yamuna will be adopted by NSS Students and will organize the cleanliness drive with special emphasis on Sewage and Industrial Waste. 2. Organisation of Plantation Drive at community level and also at Yamuna bank that will foster the prevention of soil erosion etc. It will also help in reducing the pollution.
6	Visit to Sewage/ Waste Water Treatment Plant	October	All schools of DOE	1. Students of DoE will visit the Sewage/Waste

A. Srin

	and follow up activities			<p>Treatment Plants to gain the first hand information of how the waste is treated with the cooperation of Delhi Jal Board.</p> <p>2. They will also learn how the water testing can be done using local home methods.</p> <p>3. Students will learn how different types of water can be utilized for daily needs.</p> <p>4. Students will learn how Sewage Treatment Plants work and will work upon making the miniature models.</p> <p>5. Designing the Eco-friendly Miniature Models of water management, paper recycling models by Students and Teachers for finding alternative solutions to the Problem of Draining Waste, Industrial Waste In Yamuna River.</p> <p>6. Designing and Formation of Miniature Model of Sewage/waste management plant in schools, activities to check quality of water, etc</p> <p>7. Making of Compost Pits and Recycle Pits for various wastes including household waste.</p>
7	Local tour of students to Yamuna Bio Diversity Parks, Jagatpura, New Delhi, Areas of Cleaner bank of Yamuna and other polluted bank to compare and draw a contrast to create awareness about Drainage and Industrial Waste.	November	District Wise of all 12 Districts.	<p>1. Students will visit Yamuna Bio Diversity Park, Aravalli Bio Diversity Park, Tuglakabad Bio Diversity Park and Tilpath Valley Bio Diversity Park during the Local Tours so as to have a better understanding of nature.</p>

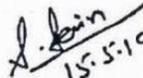
P. Kaur

				<p>2. They will adopt various good habits that are demonstrated at Bio Diversity Parks and will replicate the same at home and in community.</p> <p>3. Students will visit Wazirabad Yamuna Bank to see the cleaner site of Yamuna.</p>
8	<p>Organisation of Environment Mela displaying the work done in whole year and various competitions at school level such as Slogan Writing, Painting, essay competitions, model making from Paper Mache on the theme of Drainage and Industrial Waste. Cultural programme on cleanliness of Yamuna and facilitation of Best Students.</p>	<p>December and January</p>	<p>All schools of DOE</p>	<p>1. During Annual Day Celebration, all the schools will organize Environment Mela to sensitize the SMC members and communicate the issues related to threats to the environment.</p> <p>2. HOS will display the photographs of activities done for Yamuna cleaning in media.</p> <p>3. Various stalls can be used to demonstrate Water Testing, Eco Friendly Idol Making, Making of Compost Pits, Demonstration of waste segregation and Management in Science Exhibitions.</p> <p>4. Students & Teachers who actively participate in all programmes will be appreciated by HOS at the end of the Mela by giving Certificates/ Prizes.</p>

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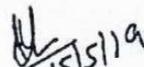
All DDEs (District and Zone) are requested to implement the above mentioned action plan in Govt., Govt. Aided Schools of DoE, GNCT of Delhi with immediate effect and ensure that the activities mentioned in the plan are conducted effectively as per the schedule with maximum involvement of Students, Teachers, SMC Members & community and submit the Action Taken Report on monthly basis.

This issues with prior approval of the competent authority.


15.5.19
(Dr. Saroj Sain)
Addl. DE (School)

Copy to:

1. PS to Secretary (Education).
2. PS to Director (Education).
3. DDE-School Branch.
4. All DDEs Districts, Zones.
5. All SPEs.
6. All HOS.
7. O.S.I.T Cell with a request to upload the circular on the website.


15/5/19
DDE (School)

**Related to Chapter 14: Creating Public Awareness Through Information
Dissemination Strategies**

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2019/ 336

Date: 28/10/19

Subject: Minutes of the meeting held by Yamuna Monitoring Committee on 17/10/19 on building public awareness to control pollution and enhance rejuvenation of River Yamuna

List of those who attended the meeting is enclosed.

Highlights of Public Awareness Activities as reported by Principal Secretary Environment and Secretary Education.

ACTIVITIES ALREADY UNDERTAKEN

The Principal Secretary (Environment & Forest) gave a brief account of meetings with religious leaders/meetings with Municipal Corporations/DDA/Revenue Department regarding the release of advertisements in National Newspapers and public participation in prevention of idol immersion in the river, display of hoardings, advertisements on DTC Buses / Bus Shelters, Railway and Bridge Panels, Metro Pillars, Foot Over Bridges etc. Banners and posters were also distributed to the offices of the Deputy Commissioners.

The Principal Secretary informed that the activities of the Eco Clubs and educational institutions were overseen and the display material prepared by the Nodal Revenue Department to undertake idol immersion only at the designated ponds and not in the river was placed on the website of the Environment and Forest Department. Instructions were also issued for providing signages on non-disposal of pooja samagri/flowers in the river were provided to the PWD. Circulars were issued to 110 schools to organize visits of students to 11 designated water bodies to sensitize students about the role of water bodies in ground water recharge and providing a

habitat for resident and migratory birds. Awareness workshops on abatement of pollution and rejuvenation of the River Yamuna were conducted for the benefit of RWAs/religious bodies and the United Residents Joint Action (URJA)-an Apex body for RWAs.

FUTURE PLANS

Environment & Forests

The MC was informed that in the ensuing months another awareness workshop with Eco Clubs, is scheduled on 6.11.19.

MC was also informed that the Environment Department is providing financial assistance of Rs 20000/- per year to each of about 2000 Schools/Colleges/Educational Institutions in Delhi (Both Govt. Private) having Eco Clubs to support their activities. Some of these are:

- Awareness Advertisement ‘Saving Yamuna ‘ is proposed to be published in National Dailies.
- Jingles on ‘‘Saving Yamuna ‘are proposed to be broad caste on FM Radio 4 times a day.
- Display of Hoardings at Prominent Places , Free Sites, Back of DTC Buses are also proposed.

Education Department

- Awareness programmes on environment issues including pollution in the river Yamuna will continue to be monitored by the Education department in the Delhi Govt. schools using material available on the website of Yamuna Monitoring Committee.
- Pamphlet ‘‘Cleanliness of River Yamuna’’ has been printed and is being distributed among schools /college students.
- Awareness is being imparted to students during the morning prayer in schools as well as through videos.
- Visits to the bio-diversity parks and sewage treatment plants are being organized.
- A Mega PTM is being organized in various Delhi Govt. Schools on 19.10.19 and awareness about control of pollution in river Yamuna will be imparted during the PTM.
- An ‘‘Environment Mela’’ with focus on Yamuna is scheduled to be held in December 2019/ January 2020.

- Selection of a Yamuna Champion encouraging participation of students for creating mass movement is proposed.

Directions of the MC

Media plan shall be prepared to build awareness:

- i. Among populations of unsewered areas in unauthorised colonies - About the need to have sewage collected and disposed of properly and not discharged in the drains as such release of sewage in drains creates unhygienic conditions for the whole city.
- ii. Farmers - About stopping agriculture particularly cultivation of food crops and vegetables (as distinguished from floriculture and silviculture) on the Yamuna Flood Plain.
- iii. Among industries in non-conforming areas - These industries were forbidden by DPCC orders to discharge industrial effluent in the drains. The penalties and other enforcement action ordered by DPCC should be notified widely as the pollution from dyeing, electroplating, chromium plating and pickling is entering the drains and affecting the running of STPs which are not designed to treat industrial waste. Release of effluent from industries in residential areas also leads to ground water contamination and high level of toxicity in the river. Such activities being impermissible in residential areas, awareness must be built in a way that the wider health hazards are understood and an effective deterrence created.
- iv. A comprehensive Public Awareness programme for sensitizing the public about the pollution in river Yamuna, its causes and what needs to be done by citizens to stop pollution in the river has been directed to be prepared covering a one year period giving month wise proposed activities / programs. This may be submitted to Monitoring Committee by November 30th. It has been delayed already for over 10 months ever since the MC gave directions to the former and present Secretary E& F and the former and present Special Secretary and Member Secretary DPCC. The MC noted that on several review meetings the Chairman DPCC had said the funds collected as EC would be used but nothing has been done and the outcomes are still generalized with no evaluation of public acceptance of the need for change. If effective steps could be taken for idol immersion, similar effective and focused action should be taken with commitment for an

advocacy programme to save the River. A mass awareness campaign on the lines of "Zara Sochiey" / "Delhi's Pride" should be prepared so that it appeals to all sections of society and makes those indulging in environmentally unsafe practices receive social reproach.

- v. MC has suggested several times that a Consultant or a Media school or agency may be hired to prepare a Media Plan and dovetail it with exhibitions and events planned by Art & Culture Department to revive interest in the cultural, religious and mythological aspects of the Yamuna. It was suggested that the Indira Gandhi Centre for the Arts (IGNCA) has copious material on the Yamuna and should be used as best possible. Exhibitions on the Bank of Yamuna should be organized as cultural events to build an ownership for the River Yamuna.
- vi. NGOs may be involved for recycling and conversion of Used Flowers / Pooja material into Agar battis or any other use and concerned Municipal Corporations / Local Bodies be asked to create necessary mechanism to encourage this. It is better to outsource the management of this activity but oversee that it meets the purpose.
- vii. The Maintenance agency for Bridges over river Yamuna (PWD or any other agency) must not ignore repeated evidence of vandalism of the bridges /public property for throwing Pooja remnants and for not repairing the meshing promptly. Also responsibility has to be fixed on the bridge owning Agency for not taking enforcement action against miscreants. *A copy of the instructions issued to the concerned Departments / Agencies in charge of maintaining the Bridges and riverine areas along with names of responsible Departments /Officers may be forwarded to the MC.*
- viii. NGOs may be involved to conduct focal group publicity and create awareness to control pollution in and around the river Yamuna. Environmental Compensation received by DPCC should be used which had been agreed to in four earlier meetings but is not being implemented. Even small events at well selected spots if conducted frequently at known hot-spots will generate a buzz.
- ix. Considering that substantial progress was achieved this year in preventing idols being immersed in the river Yamuna, a report from the Divisional Commissioner & other agencies on Idol Immersion during Ganesh Chaturthi and Durga Pooja Festivals may be obtained and submitted to the MC. The report should specifically document the steps

taken and lessons learnt so that the efforts of this year are used during the Durga pooja and Ganesh Chaturthi idol immersions during the next year. Secretary E&E agreed to attend to this and submit a report.

- x. During the previous meeting the MC held on 17.10.19, it was stated that there should be no distinction between Government and Private Schools when it comes to building public awareness. Education Department must encourage awareness activities, and other measures to understand the need for keeping a clean and healthy river and take responsibility for all students. The plans for holding such meetings with private schools may be sent to MC.

Need for a Compendium with Pictures, Data and samples of efforts made.

A report has to go to NGT about the steps taken and planned to be taken by January 2020. To inform NGT in a comprehensive manner, a compendium may be prepared in 2 parts with reference to numbers covered and the effect of the outreach in terms of public ownership.

Part A: Covering documentation on activities and outcomes undertaken by Environment and Forests Department and future plans month on month. The outcomes should be available at a glance in terms of number of buses, number of shelters/bridges/students covered under each of the approaches in the past few months and the financial outgo on each activity so that the dimension of population covered can be understood. The idol immersion part should be a separate segment as it is seasonal and festival specific.

Part B: Activities undertaken by the Education Department for all schools Municipal, GNCT and Private covering all students with samples, numerical data about schools/ students and different activities.

Need for Building Awareness in MCD schools:

The MCD schools teach children up-to class five. These are young children and must be included in the programmes. MC would be directing the Commissioners to see that their Directors of Education attend meetings called by the Secretary Education and Director of Education. They should be a shared approach to build awareness about the environment of Yamuna. A copy of these minutes are being ccd to MCD Commissioners and their Directors of Education for necessary action.

The compendium referred to will be given to the NGT and displayed on the MC's website so that activities can be sustained next year. It should be understood by all stakeholders, should be properly structured, have pictures and should be without acronyms and jargon as far as possible.

It may be sent as a hard and soft copy.

Sd/-

Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-

B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To:

1. Secretary (Education).
2. Principal Secretary (Environment).

Copy to:

1. Commissioner South DMC.
2. Commissioner East DMC.
3. Commissioner North DMC.
4. Direction (Education), South DMC.
5. Direction (Education), East DMC.
6. Direction (Education), North DMC.

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
Telephone No: 011- 24609270
Email id: rymonitoringcommittee@gmail.com

Related to Chapter 14: Creating Public Awareness Through Information Dissemination Strategies

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA 8INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

DO No. YPMC/2019/ 68

Dated: 10.01.2019

Dear Minister Sisodia

Thank you for a positive meeting on 24.12.2018 in your office. As Members of the Monitoring Committee constituted by the Hon'ble National Green Tribunal to monitor directions of the Tribunal relating to the abatement of pollution in the River Yamuna and promote its revival. Building public awareness has been a repeated direction of the NGT.

We are providing a Record Note of the Discussions held (attached). We would appreciate it if this could be acknowledged and necessary action started at an early date as the milestones have already been included in the Progress Report being sent to the Hon'ble NGT.

During the meeting you gave several progressive ideas and it is hoped that a series of promotional activities involving school children, the general public and more particularly organized and unorganized clusters of citizens living in different kinds of habitation are planned and started as soon as possible. It was agreed that it was necessary to make school children aware of the connection between their daily lives and the creation and disposal of human, domestic and other waste. The linkage of how this leads to choking of storm water drains and fills them with filth, which ultimately goes to destroy the river needs to be emphasized imaginatively. That, the pollution in the river

has given rise to unacceptable levels of faecal coliform, debris (malba) and toxic chemicals and destroyed what could be a beautiful river has to be understood by all concerned. The public, starting with school children should not only understand how pollution in water bodies, drains and the river affects their own lives but why there is a need for preventive, deterrent and enforcement action if the river as well as peoples' quality of life is to be protected and is to improve.

We look forward to all the positive ideas being given shape at an early date. The Record Note of Discussion may kindly be seen and acknowledged by your office.

With Regards,

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To: Sh. Manish Sisodia, Deputy Chief Minister of Delhi & Minister of Education,
A-Wing, 6th Level, Delhi Secretariat, I.P.Estate, New Delhi-110002.

Copy to:

1. Sh. Madhup Vyas, Secretary (Environment & Forest).
2. Sh. Sanjay Goel, Director of Education.

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003
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APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA 8INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

Subject: Record Note of Discussions of Meeting held on 24.12.2018 with Deputy Chief Minister of Delhi and the Monitoring Committee set up by NGT on Public Awareness.

At the outset the Monitoring Committee thanked the deputy CM for having invited them for a meeting and explained how there was an urgent need to start awareness campaigns about the pollution in the drains, water bodies the River Yamuna which affects the quality of life of citizens adversely. The MC requested the Deputy CM to start campaigns to build public awareness at the school level which can be expanded to cover all organized and unorganized colonies as a comprehensive approach to stopping pollution but also rejuvenating the water bodies, outfall drains and the river. The subjects discussed are given below:

- (i) The Deputy Chief Minister suggested a meeting with religious leaders of all religions who can be used to convey messages about how households and eventually the residential colonies contribute to the pollution which each family must avoid. Environment & Forests Department was asked to convene a meeting with religious leaders of all religions on the urgent need to combat water pollution caused by human activity which was choking the drains.
- (ii) The Deputy Chief Minister asked the Director of Education to plan an awareness campaign for school children and in particular to organize a painting competition on the banks of the Yamuna to enable children to internalize the message of cleanliness starting with the home but ending with a clean, flowing river.
- (iii) The Deputy Chief Minister indicated that the Government would use prominent NGO's to set up collection points at Wazirabad, ISBT, Signature Bridge, Nizamuddin Bridge which are today being used for throwing Pooja Samagri into the river.

- (iv) Efforts to convert the retrieved waste into agarbattis and other useful products would be promoted. Permanent boards would be put up at prominent places at the entry to the bridges to stop pollution and use special *Pooja samagri* receptacles to be provided specially for this purpose.
- (v) The MC suggested that the Government should set up a Consortium of NGOs and Board members of DPCC to jointly consider and approve small, innovative projects which can lead to reducing pollution and can utilize the Pooja remnants, plastic waste and other recyclable waste material retrieved from the Yamuna to make utility items as is already being done with flower waste at Kanpur. Such initiatives would be a route to build public awareness. Establishing a Consortium serviced by the Department of Environment & Forests would ensure providing flexibility and freedom to the proposed Consortium to approve and fund out of – the –box ideas within systems and procedures that the Consortium can decide.
- (vi) A public awareness campaign was agreed to be undertaken for discouraging agriculture and cultivation of vegetables on the Yamuna Flood plain and by dissuading people from eating such produce as it leads to entry of toxins in the food chain. Enforcement action to stop such sale on the bridges over and leading to the River would be got mounted by the MCD.

Since the pollution of the river has increased manifold the Monitoring Committee requested that an early direction be given to the concerned authorities.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

Address: Room No. 58, India International Centre
40, Max Mueller Marg, New Delhi – 110003

Related to Chapter 14: Creating Public Awareness Through Information Dissemination Strategies

GOVERNMENT OF NATIONAL CAPITAL TERRITORY DELHI
DIRECTORATE OF EDUCATION: SCHOOL BRANCH
OLD SECRETARIAT: DELHI-110054



No. DE.23 (42) / Sch.Br./2018/84

Dated: 30/4/19

To,

Hon'ble Members
Monitoring Committee for Yamuna
Room No. 58, India International Centre
40, Max Mueller Marg, Lodhi Estate
New Delhi- 110003

Sub: Record Note of discussions held by the Yamuna Monitoring Committee with Secretary (Education) and Secretary (Environment and Forest), GNCTD held on 19.03.2019.

Sir,

I am directed to refer to directions to the Education Department on the subject cited above issued vide No. YPMC/2019/133 dated 22.03.2019, wherein it was inter-alia directed that the Action Plan for schools would be recast suitably and should include activities and also address the need for media coverage for school activities related specifically to the Yamuna.

The recast action plan of activities is enclosed herewith.

Necessary media coverage of these activities would also be carried out at the appropriate stage with the approval of the Competent Authority.

This issues with the approval of Competent Authority.

S. Sain
30-4-19
(Dr. Saroj Sain)
Addl. DE (School)

YPMC
Diary No. *112/19*
Date *30/04/19*

DIRECTORATE OF EDUCATION.
GNCT OF DELHI

**PLAN OF ACTIVITIES ABOUT
CLEANLINESS OF YAMUNA RIVER**

Sl. No.	ACTIVITY	MONTH	DETAILS OF ACTIVITY	PARTICULARS
1.	Training of all HOS, Eco Club In-charges and NSS program officers of DOE schools regarding waste management, sewage management, recycling of waste etc.	May- June	All HOS, Eco Club Incharges and NSS Programme Officers of 1022 DOE schools	SCERT, DJB and Dep. of Environment & Industries with NGOs will develop a training Module to impart training.
2.	Introduction and awareness about Action Plan at School Level to cleanliness on Yamuna river with special emphasis on drainage waste and industrial waste.	July- August	All schools	<p>1. Awareness session during Morning Assembly by HOS, Teachers, Eco Club In-charges and Students. Relevant Slides downloaded from Yamuna Monitoring Committee website will be shown to students.</p> <p>2. Demonstration in Classroom during teaching periods of Social Science and S.U.P.W, Gen Studies etc. of how Drainage and Industrial Waste cause pollution and can be treated.</p> <p>3. Environment Specific Pledge will be taken by Students and Teachers on First Monday of every month in the Assembly.</p>
3	Organisation of various activities discussed in training at school level e.g. Industrial and Drainage waste management, recycling of waste, sewage management etc.	July- August	All 1022 DOE schools (Using SCERT Training module developed by SCERT, DJB, Environment, DOE)	All the activities discussed during the training will be conducted in schools by Eco Club Incharges, Trainee Teachers and NSS Programme Officers.
4	Awareness Programmes at community level through Cleanliness drives, Information Campaigns about Drainage and Industrial Waste etc.	July- August	HOS may include SMC members for this.	<p>1. HOS, Students, Teachers and SMC members will create Awareness in the community through PTMs in schools. Students will demonstrate activities learnt in schools in community.</p> <p>2. Making up of Eco friendly Idols/effigies for immersion during the festivals.</p>

29/10

				3. Segregated system of waste management will be demonstrated with special emphasis on Non bio degradable wastes.
5	Organisation of Cleanliness Drives by NSS Students and NSS In-Charge of schools, HOS, SMC members and community people at the bank of Yamuna, adopting a particular area of Yamuna River, for showing how Drainage and Industrial Waste affect Yamuna.	September	District Wise in all 12 Districts by NSS Students and NSS Officer In-Charge.	<ol style="list-style-type: none"> 1. Area around river Yamuna will be adopted by NSS Students and they will organize the cleanliness drive with special emphasis on Sewage and Industrial Waste. 2. Organisation of Mega Plantation Drive that will foster the stability of sand and prevention of soil erosion etc. It will also reduce the pollution.
6	Visit to Sewage/ Waste Water Treatment Plant and follow up activities.	October	All 1022 DOE schools	<ol style="list-style-type: none"> 1. Students of DoE will visit the Sewage/Waste Treatment Plants to gain the first hand information of how the waste is treated with the cooperation of Delhi Jal Board. 2. They will also learn how the water testing can be done using local home methods. 3. Students will learn how different types of water can be utilized for daily needs. 4. Students will learn how Sewage Treatment Plants work and will work upon making the miniature models. 5. Designing the Eco- friendly Miniature Models of water management, paper recycling models by Students and Teachers for finding alternative solutions to the Problem of Draining Waste, Industrial Waste in Yamuna River, Designing and Formation of Miniature Model of Sewage/waste management plant in schools, activities to check quality of water, etc. 6. Making of Compost Pits and Recycle Pits for various wastes.

	<p>Local tour of students to Yamuna Bio Diversity Park, Jagatpur, New Delhi, Areas of Cleaner bank of Yamuna and other polluted bank to compare and draw a contrast to create awareness about Drainage and Industrial Waste.</p>	<p>October- November</p>	<p>All 1022 DoE Schools.</p>	<ol style="list-style-type: none"> 1. Students will visit Yamuna Bio Diversity Park, Aravali Bio Diversity Park and Tilpat Bio Diversity Park during the Local Tours so as to have a better understanding of nature. 2. They will adopt various good habits that are demonstrated at Bio Diversity Parks and will replicate the same at home and in community. 3. Students will visit Wazirabad Yamuna Bank to see the cleaner sight of Yamuna.
8	<p>Organisation of Mega Environment Mela displaying the work done in whole year and various competitions at school level such as Slogan Writing, Painting, essay competitions, model making from Paper Mache on the theme of Drainage and Industrial Waste. Cultural programme on cleanliness of Yamuna and facilitation of Best Students.</p>	<p>December and January</p>	<p>All 1022 DOE schools</p>	<ol style="list-style-type: none"> 1. Schools will organize Mega Environment Mela to sensitize the SMC members and community about the issues related to threats to environment during Annual Day Celebration. 2. Various stalls can be used to demonstrate Water Testing, Eco Friendly Idol Making, making of Compost Pits, Demonstration of waste segregation and Management in Science Exhibitions. 3. Students & Teachers who actively participate in all programmes will be appreciated by HOS at the end of the Mela by giving Certificates/ Prizes.

S. Jain
30.4.15

Related to Chapter 14: Creating Public Awareness Through Information Dissemination Strategies

**OFFICE OF THE YAMUNA POLLUTION MONITORING COMMITTEE
APPOINTED BY HON'BLE NGT
ROOM NO. 58, INDIA INTERNATIONAL CENTRE
40, MAX MUELLER MARG, LODHI ESTATE
NEW DELHI – 110003**

No. YPMC/2019/396

Date: 31/12/19

Subject: Follow up on efforts made to built public awareness to control pollution and to enhance rejuvenation of River Yamuna.

Background : The Environment and Forest Department of the GNCTD of Delhi has been apprising the Yamuna Monitoring Committee of the efforts made to build public awareness to control pollution in the River Yamuna. The progress on the paper was not quantifiable and therefore after receiving the statement of activities to be undertaken it was noted that although the plans appeared worthwhile, the dates need to be made very specific and the names of the executing agencies mentioned. Now on 10.12.19 the same statement has been received except that the name of the Department responsible for implementing the items listed have been added. On the following matters the dates continue to be long term and without specificity. The action plan may please specify these dates because nothing tangible has taken place (except the Yamuna Advertisement on 29th December). Beyond that, no commitments have been made to cover the next 12 months considering that there has been hardly any tangible progress for more than 14 months. The timelines and schedules drawn up may not however reflect efforts upon the Education Department who have been sending reports separately:

1. Competitions

The time given is January to December 2020 involving RWA's in every Revenue District and including several activities. District wise details of what is planned to be done from January to December 2020 month by month may be made available.

2. Awareness Workshops

Awareness workshops are similarly proposed to be held involving RWA's in every district and separately for industries and farmers. Specific month wise programmes may be indicated along with number of RWAs/Industries/Farmer proposed to be called/covered.

3. Workshops on building awareness in unauthorized colonies

The workshops are proposed to be held from January to December 2020 but there is no indication on how 1797 colonies would be covered, the venues and what is proposed to be told to the representatives of the unauthorised colonies considering that their options are limited. A month to month programme may be made available indicating groups of colonies to be covered and the residents being targeted. Most dwelling units must be rented and the occupants would be at work most of the day.

4. Nukkad Natak

It has been proposed that the Nukkad Nataks would be held in markets, public and other prominent places. Again the dates are one year long without any specificity of the monthly programmes proposed – district wise/ market wise and at identified hubs where people congregate.

5. Temple flowers

This matter has been under discussion right from September 2018. There is absolutely no quantifiable progress given over the last more than 12 months. Nothing specific has been reported over the last 15 months except generalities. If such general responses come as they have been received repeatedly, YMC would have to say that there is no evidence that anything tangible has actually been done.

6. Radio jingles , news paper advertisements on the rejuvenation of River Yamuna and audio visuals.

The same report has been given several times by the department with no specificity that how many jingles /advertisements would be given month to month and by which agency and whether any agency has been identified. It is noted that a good advertisement has appeared on 29.12.19. But that happens to be the only one.

7. Message from Chief Minister

This has since been done. However this may be repeated periodically, say after every three months.

8. Workshop with Farmers

It has been reported that almost 20 workshops of farmers have already been held. Details on where these workshops were held and how many farmers came and what was told them are not given. Their responses if any have to be shared with specificity about what is intended to be done to stop cultivation of edible items.

Conclusion : The reports coming from E&F Department are very cryptic and do not quantify or give month wise schedule. The YMC would need report to NGT that nothing very specific has been done for the last 15 months and forthcoming progress is vague and does not have any specific content. The same things are being repeated. MC requests the Department which also has a link with DPCC, to give evidence of its commitment as already 15 months have elapsed since the plans have been reviewed with three different Secretaries- Shri AK Singh, Shri Madhup Vyas and Shri Sanjiv Khirwar and two Special Secretaries who were also the Member Secretary of DPCC and hence fully aware of the major points of pollution caused by public apathy and negligence.

Sd/-
Shailaja Chandra,
Member,
Monitoring Committee for Yamuna

Sd/-
B.S. Sajwan,
Member,
Monitoring Committee for Yamuna

To: Principal Secretary (Environment & Forest),
Govt of NCT of Delhi.