National Mission for Clean Ganga (NMCG)
Ministry of Jal Shakti,
River Development & Ganga Rejuvenation
Government of India

Development and Rehabilitation of Sewage Treatment Plants and Associated Infrastructure Under Hybrid Annuity Based PPP Mode at Prayagraj, Uttar Pradesh

(LOA File Number: 50123/447/121, dated 10/11/2018)

Monthly Progress Report
of
Project Engineer
March 2023

Executing Agency	Funding Agency	Project Engineer	Concessionaire
GPCU, Uttar Pradesh Jal Nigam, Prayagraj, Uttar Pradesh 211008	National Mission for Clean Ganga, Ministry of Water Resources, New Delhi 110002	AECOM India Pvt. Ltd., 19/F, Bldg. 5-C, DLF Cyber City, DLF Phase-III, Gurgaon, Haryana-122002	Prayagraj Water Pvt. Ltd., (SPV of ADANI Enterprise Ltd. and Organica Technologiak ZRT) Adani House, 56 Shri Mall, Society, Navrangpura, Ahmedabad.

Table of Contents

1. Introduction

The GoI (Government of India), recognizing that the long-term rejuvenation of the river Ganga will have significant social and economic benefits on the lives of 500 Million people living along its basin, has identified cleaning of the river Ganga as one of its priorities. For this purpose, in May-2015, The Government of India approved the flagship Namami Gange Program for cleaning rejuvenation and protection of river Ganga and its tributaries. In january-2016, The Government of India approved a Hybrid annuity model to implement the STP project under the Namami Gange program on a PPP basis.

Subsequently, the MoWR (Ministry of Water Resources) issued the river Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016 (Ganga 2016 Order) to constitute various authorities to assist the Government of India in achieving its aim of effective abatement of pollution in the river Ganga. The Ganga 2016 order designated NMCG as the nodal agency for implementation of the Ganga 2016 order.

Rapidly increasing population, rising standards of living and exponential growth of industrialization and urbanisation have exposed water resources, in general, and rivers to various forms of degradation. The mighty Ganga is no exception. The deterioration in the water quality impacts the people immediately. Ganga, in some stretches, particularly during lean seasons has become unfit even for bathing. The threat of global climate change, the effect of glacial melt on Ganga flow and the impacts of infrastructural projects in the upper reaches of the river, raise issues that need a comprehensive response.

In the Ganga basin approximately 12,000 million litres per day (MLD) sewage is generated, for which presently there is a treatment capacity of only around 4,000 MLD. Approximately 3000 MLD of sewage is discharged into the mainstream of the river Ganga from the Class I & II towns located along the banks, against which treatment capacity of about 1000 MLD has been created till date.

The Uttar Pradesh Jal Nigam (Jal Nigam) is a statutory body constituted under the Uttar Pradesh Water Supply and Sewerage Act, 1975, and has the power to develop, maintain and regulate water supply and sewerage works in Uttar Pradesh. With a view to implement the Namami Gange programme and the Ganga 2016 Order, the Jal Nigam, in association with the NMCG, has decided to undertake the Project;

- Development and Rehabilitation of Sewage Treatment Plants (STPs) and Associated Infrastructure at Prayagraj under Hybrid Annuity based PPP mode in State of Uttar Pradesh.

While the Jal Nigam will be the principal executing agency and bidding authority for the Project, NMCG will be responsible for making payments to the Concessionaire and Project Engineer.

2. Hybrid Annuity Model (HAM)

Government of India has approved the Namami Gange program as an integrated approach for effective abatement of pollution in river Ganga and Yamuna. As part of this and to ensure that no untreated domestic sewage flow into the river Ganga and Yamuna, various interventions are planned such as Interception & Diversion works and development & operation of Sewage Treatment Plants (STPs).

Considering various development models in practice for the construction, operation and maintenance of Sewage Treatment Plants, Government of India has approved the Hybrid Annuity based Public Private Partnership (PPP) mode as one of the options for the development & operation of STPs. Under this model, private investor/developer will design, build, finance, construct, rehabilitate, renovate, operate and maintain the asset (STPs, IPS, and MPS) to the Project Executing Agency/Jal Nigam at the end of the Concession Period (15 years). 40% of the Capital cost will be paid to the developer during construction of the STP. Balance 60% along with Operation & Maintenance (O&M) cost will be paid over the Concession Period on achievement of key performance indicators as per the contract. Entire cost of development and operation of the STPs will be 100% funded by the Government of India as central sector scheme.

National Mission for Clean Ganga (NMCG) and Uttar Pradesh Jal Nigam (UPJN) appointed M/s. AECOM India Pvt. Ltd., as Project Engineer for this project through tendering process. Letter of Award is issued dated 4th February 2019 and agreement signed between the parties on 5th April 2019.

3. Objectives

Objectives to achieve effective Development of Sewage Treatment Plants (STPs) at Jhunsi, Naini and Phaphamau, rehabilitation of existing STPs & associated Infrastructure and operation and maintenance of all assets for 15 years in Prayagraj, Uttar Pradesh, under Hybrid Annuity based PPP mode are proposed under this project.

The objectives that NMCG and the UP Jal Nigam wish to achieve through the Project is mentioned in **Figure 1;**

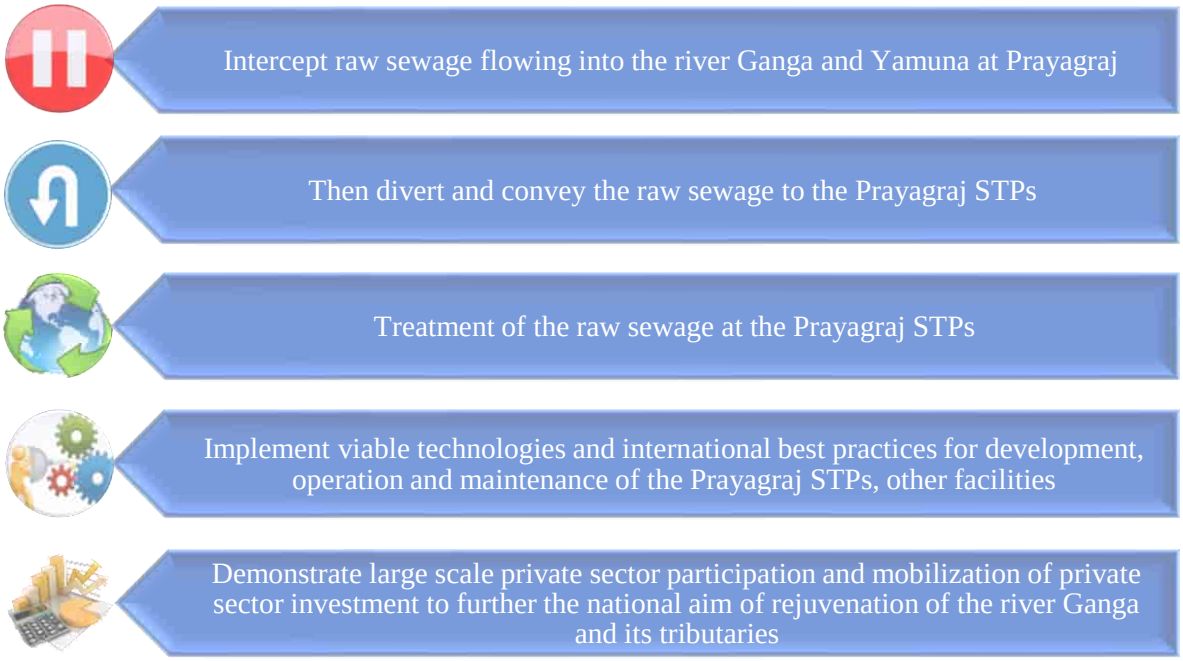


Figure 1 : Objectives of NMCG and UP JAL NIGAM

Government of India has approved the Namami Gange program as an integrated approach for effective abatement of pollution in river Ganga and Yamuna. As part of this and to ensure that no untreated domestic sewage flow into the river Ganga and Yamuna, various interventions are planned such as Interception & Diversion works and development & operation of Sewage Treatment Plants (STPs). Considering various development models in practice for the construction, operation and maintenance of Sewage Treatment Plants, Government of India has approved the Hybrid Annuity based Public Private Partnership (PPP) mode as one of the options for the development & operation of STPs. Under this model, private investor/developer will design, build, finance, construct, rehabilitate, renovate, operate and maintain the asset (STPs and Associate Infrastructure) to the Project Executing Agency/Jal Nigam/ at the end of the Concession Period (say 15 years). 40% of the Capital cost will be paid to the developer during construction of the STP. Balance 60% along with Operation & Maintenance (O&M) cost will be paid over the Concession Period on achievement of key performance indicators as per the contract. Entire cost of development and operation of the STPs will be 100% funded by the Government of India as central sector scheme.

National Mission for Clean Ganga (NMCG) appointed M/s. AECOM India Pvt. Ltd., Gurgaon as Project Engineer for this project through tendering process. Letter of Award is issued dated 4th February 2019 and agreement signed between the parties on 5th April 2019.

4. Project at Glance

The Project components details of each Facility, their grouping in each Package is presented below.

Sr. No.	Particulars	Description
1.0	**Name of Project**	**Development and Rehabilitation of Sewage Treatment Plants and Associated Infrastructure under HAM based PPP mode at Prayagraj, Uttar Pradesh**
	Client	National Mission for Clean Ganga (NMCG) and Uttar Pradesh Jal Nigam (UPJN)
2.0	Executing Agency	Uttar Pradesh Jal Nigam, Ganga Pollution Control Unit, Prayagraj, Uttar Pradesh
3.0	Project Engineer	AECOM India Pvt. Ltd.
4.0	Concessionaire	Prayagraj Water Pvt. Ltd. (SPV of ADANI Enterprise Ltd. JV Organica Technologiak ZRT)
5.0	Contract Value (Capex + Opex)	INR 908.3 Crore
6.0	Effective Date	16th September 2019
7.0	Construction Completion Date	Package-I; 24 months from effective date Package-II; 12 months from effective date Package-III; 6 months from effective date
6.0	Operation & Maintenance	Package-I; 15 years from commercial operation date Package-II; 16 years from commercial operation date Package-III; 16.5 years from commercial operation date

5. Site Location

Entire work has been divided/ distributed in the following 3 packages.

- Package-I: Construction of 03 Nos. new STP's with Associated Infrastructure (Naini-II (42 MLD), Jhunsi (16 MLD) & Phaphamau (14 MLD)). Setup rooftop Solar Power Plant of capacity 930kW (110kW at Phaphamau, 800kW at Naini-II and 20kW at Jhunsi).

- Package II: Rehabilitate and Restore 02 Nos. STP's with Associated Infrastructure (Rajapur (60 MLD) & Naini-I (60+20 MLD).

- Package III: Rehabilitate and Restore 04 Nos. STP's with Associated Infrastructure Numayadahi (50 MLD), Ponghat (10 MLD), Kodra (25 MLD) & Salori (29 MLD).

6. Project Components

The Project components details of each Facility, their grouping in each Package is presented below

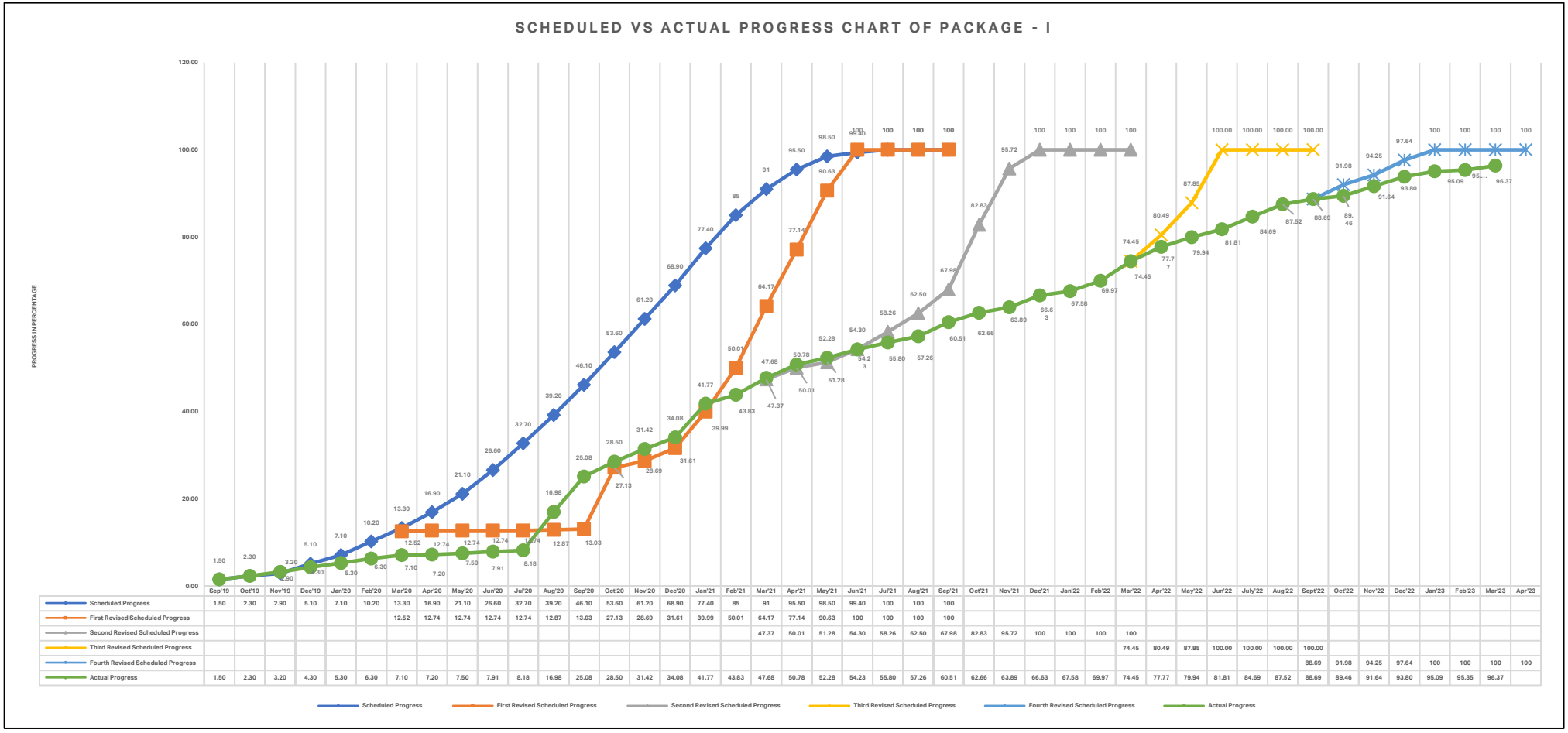
Package Number - I				
Nature of work	**Facilities**			
New construction	Design, develop, finance, construct, operate and maintain, and transfer the Package-I Facilities including three STP facilities with a proposed capacity of 42 MLD at Naini (District G), 14 MLD at Phaphamau (District F), and 16 MLD at Jhunsi along with their Associated Infrastructure, as per the provisions of the Concession Agreement, and in adherence to the applicable Key Performance Indicators			
Sr. No.	**Facility Name**	**Part Of**	**Details**	**Capacity (Average)**
1	Phaphamau Facilities (District -F)	Phaphamau STP Facilities	Phaphamau STP Plant	14 MLD
			Solar Power Plant	110 Kw
		Phaphamau Associated Infrastructure	Basna Nalla SPS	5.53 MLD
			Nalla Tapping and Trunk Sewer	2 Nos. Tapping
			Shantipuram Main Pumping Station	14 MLD
2	Naini Facilities (District - G)	Naini – II STP Facilities	Naini –II STP	42 MLD
			Solar Power Plant	800 Kw
		Naini -II Associated Infrastructure	Mawaiya Drain SPS	35.85 MLD
			Mawaiya Drain Tapping and Trunk Sewer	3 Nos. Tapping
			Mahewaghat Drain SPS	2.15 MLD
			Mahewaghat Drain a nd Trunk Sewer	3 Nos. Of Tapping
			Main Pumping Station	43.5 MLD
3	Jhunsi Facilities	Jhunsi STP Facilities	Jhunsi STP	16 MLD
			Solar Power Plant	20 Kw
		Jhunsi Associated Infrastructure	Shastri Bridge SPS	16 MLD
			Nalla Tapping a nd Trunk Sewer	13 Nos. Tapping
			Main Pumping Station	16 MLD

Package Number - II				
Nature of work	**Facilities**			
Rehabilitation	Design (wherever necessary), rehabilitate, restore, finance, operate and transfer two existing STP Facilities, one of capacity 80 MLD at Naini (District A) and other of capacity 60 MLD at Rajapur (District D) along with their Associated Infrastructure as per the provisions of the Concession Agreement, and in adherence to the applicable Key Performance Indicators.			
Sr. No.	**Facility Name**	**Part Of**	**Details**	**Capacity (Average)**
1	Naini -I Facilities (District A)	Naini–I STP Facilities	Naini –I STP (60 MLD) STP Technology: ASP	60 MLD
			Naini –I STP (20 MLD) STP Technology: ASP	20 MLD
			Naini- I Biogas Plant	600 KW
		Naini–I Associated Infrastructure	Chachar Nalla SPS	35 MLD with 2 Nos. Tapping
			Gaughat MPS	80 MLD
2	Rajapur Facilities (District D)	Rajapur STP Facilities	Rajapur STP STP Technology: UASB	60 MLD
		Rajapur Associated Infrastructure	Mumfordgunj SPS	55 MLD with 1 Nos. Tapping
			Rajapur SPS	25 MLD with 1 Nos. Tapping

Package Number - III				
Nature of work	**Facilities**			
Rehabilitation	Design (wherever necessary), rehabilitate, restore, finance, operate and transfer four existing STP Facilities, one of capacity 50 MLD at Numayadahi (District B), one of capacity 29 MLD at Salori (District C), one of capacity 25 MLD at Kodra (District E) and another of capacity 10 MLD at Ponghat (District E), along with their Associated Infrastructure, as per the provisions of the Concession Agreement, and in adherence to the applicable Key Performance Indicators.			
Sr. No.	**Facility Name**	**Part Of**	**Details**	**Capacity (Average)**
1	Salori Facilities (District - C)	Salori STP Facilities	Salori STP (29 MLD) STP Technology: FAB	29 MLD
		Salori Associated Infrastructure	Salori MPS	29 MLD with 1 Nos. Tapping
2	Numayadahi Facilities (District B)	Numayadahi STP Facilities	Numayadahi STP STP Technology: Bio tower + ASP	50 MLD
		Numayadahi Associated Infrastructure	Ghaggar Nalla SPS	50 MLD with 1 Nos. Tapping
			Sasur Kadheri SPS	15 MLD with 1 Nos. Tapping
			Lukarganj SPS	16.5 MLD with 1 Nos. Tapping
3	Kodra Facilities (District E)	Kodra STP Facilities	Kodra STP STP Technology:Bio tower + ASP	25 MLD
		Kodra Associated Infrastructure	Kodra MPS	25 MLD with 1 Nos. Tapping
4	Ponghat Facilities (District E)	Ponghat STP Facilities	Ponghat STP STP Technology: Bio tower + ASP	10 MLD
		Ponghat Associated Infrastructure	Ponghat MPS	10 MLD with 1 Nos. Tapping

7. Status of project

7.1 Package-I Overall progress status



- **Project Engineer has provided observation on Concessionaire March'23-month MPR vide letter number AIPL/NMCG/PRAYAG/1595 on dated 19.04.2023 Therefore, status may be change after observation incorporated by Concessionaire.**

7.1.7 Physical construction Activities in March'23 month

PHYSICAL CONSTRUCTION ACTIVITIES, ACTION TAKEN REPORT ,RECOMMENDATION AND KPI REPORT FOR PACKAGE-I IS MENTIONED IN

ANNEXURE - I

7.2 Package-II status

OFFICE OF THE GENERAL MANAGER,
कार्यालय महाप्रबन्धक,
GANGA POLLUTION CONTROL UNIT,
गंगा प्रदूषण नियंत्रण इकाई,
U.P. JAL NIGAM, PRAYAGRAJ
उ० प्र० जल निगम, प्रयागराज
Email- *gmganga.allahabad@gmail.com*

Letter no. 2484 /PWPL (Adani) / 496 Dated: 20/ 09 / 2021

To,

General Manger-Project
M/s. Prayagraj Water Private Limited,
"Adani House", 56, Shrimali Society,
Near Mithakhali Six Road,
Navrangpura, Ahmedabad 380006
Gujarat, India.

Name of Work: Development and Rehabilitation of Sewage Treatment Plants and Associated Infrastructure under Hybrid Annuity Based PPP Mode at Prayagraj, Uttar Pradesh.

Sub:- Concession Agreement no. 31/GM/2018-19:Issuance of Commercial Operations Date of Package-II.

Ref :- 1. Our office Letter No 2474/PWPL(Adani)/486 dated 18.09.2021
2. Our office Letter No. 2483/PWPL(Adani)/495 dated 20.09.2021

Sir,

With reference to the above mentioned subject, it is to be noted that we have issued the 4th Milestone completion certificate vide Letter No. 2474/PWPL(Adani)/486 dated 18.09.2021 & Rehabilitation Completion Certificate vide Letter No. 2483/PWPL(Adani)/495 dated 20.09.2021 after the detailed assessment of the documents provided by the concessionaire.

In view of the same, we are hereby issuing the COD certificate to the concessionaire. Details of the same is mentioned below-

Sl. No.	Description	Commercial Operations Date (COD)
1	Rehabilitation works under Pkg-II	01.06.2021

(M.C. Srivastava)
General Manager

End No & date: As above.
Copy to following for information and necessary action

1- Executive Director(Projects), NMCG, New Delhi.
2- Chief Engineer (Ganga), U.P. Jal Nigam Lucknow.
3- Chief Engineer (Prayagraj Zone), U.P. Jal Nigam, Prayagraj.
4- Mr. Rajat Gupta, Sr. Specialist, NMCG, New Delhi.
5- Project Manager (I/E&M), Ganga Pollution Control Unit, U.P. Jal Nigam, Prayagraj.
6- AECOM India Pvt. Ltd. (Project Engineer), Gurgaon.

20/9/21
General Manager

Commercial Operations Date was announced on 01.06.2021 vide letter no. 2484/PWPL (Adani)/496

KPI REPORT'S OF PACKAGE - II,

ACTION TAKEN REPORT AND RECOMMENDATION IS MENTIONED IN

ANNEXURE - II

7.3 Package-III status

OFFICE OF THE GENERAL MANAGER,
कार्यालय महाप्रबन्धक,
GANGA POLLUTION CONTROL UNIT,
गंगा प्रदूषण नियंत्रण इकाई,
U.P. JAL NIGAM, PRAYAGRAJ
उ0 प्र0 जल निगम प्रयागराज,
दूरभाष : 0532-2684329, 2684691, फैक्स 0532-2684699

Letter No. 2336/PWPL(Adani)/423 Dated: 02/11/2020

To,

M/s. Prayagraj Water Private Limited,
"Adani House", 56, Shrimali Society,
Near Mithakhali Six Road,
Navrangpura, Ahmedabad-380006
Gujrat, India.

Name of Work: Development and Rehabilitation of Sewage Treatment Plants and Associated Infrastructure under Hybrid Annuity Based PPP Mode at Prayagraj, Uttar Pradesh.

Subject: **Concession Agreement no. 31/GM/2018-19:** Issuance of Commercial Operations Date of Package-III.

Sir,

With reference to the above mentioned subject, it is to be noted that we have issued the 2nd Milestone completion certificate vide Letter No. 2328/PWPL(Adani)/415 dated 31.10.2020 & Rehabilitation Completion Certificate vide Letter No. 2330/PWPL(Adani)/417 dated 31.10.2020 and LD Waiver Letter No. 2331/PWPL(Adani)/418 dated 31.10.2020 after the detailed assessment of the documents provided by the concessionaire.

In view of the same, we are hereby issuing the COD certificate to the concessionaire. Details of the same is mentioned below-

Sl. No.	Description	COD Commencement Date
1	Rehabilitation works under Pkg-III	01.11.2020

Yours faithfully

General Manager

Endt No. & and date as above:

Copy to following:

1- E.D.(Projects), NMCG, New Delhi.
2- MD, UPIN Lucknow.
3- Chief Engineer (Ganga), U.P. Jal Nigam Lucknow.
4- Chief Engineer (Prayagraj Zone), U.P. Jal Nigam Prayagraj.
5- Shri. Madav Kumar, Sr. Economics and Financial Expert, NMCG, New Delhi.
6- Project Manager (I/E&M), GPCU, U.P. Jal Nigam Prayagraj.
7- AECOM India Pvt. Ltd. (Project Engineer), Gurgaon.

Commercial Operations Date was announced on 02.11.2020 vide letter no. 2336/PWPL (Adani)/423

KPI REPORT'S OF PACKAGE - III,

ACTION TAKEN REPORT AND RECOMMENDATION IS MENTIONED IN

ANNEXURE - III

8. Meetings, Discussions and Site Visits:

Regular progress review meetings are being held at UPJN office & sites. Following meetings were held during the month of March 2023.

Sr. No.	Site Visit & Meeting with UPJN / NMCG / PWPL	Date	Attendees	Description
1.	Site inspection of Naini-II STP	1-Mar-23	Mr. Gaurav Gupta Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
2.	Site inspection of Phaphamau STP	2-Mar-23	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
3.	Site inspection of Naini-II STP	11-Mar-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
4.	Site inspection of Phaphamau STP	20-Mar-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
5.	Site inspection of Jhunsi STP	22-Mar-23	Mr. Gaurav Gupta Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities of plant
6.	Site inspection of Naini-II STP	24-Mar-23	Mr. Gaurav Gupta Mr.Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
7.	Site inspection of Jhunsi STP	25-Mar-23	Mr. Gaurav Pandey Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing civil & E&M activities of plant
8.	Site inspection of Phaphamau STP	27-Mar-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing civil & E&M activities and operation and maintenance of plant
9.	Site inspection of Jhunsi STP	27-Mar-23	Mr. Gaurav Gupta Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing civil & E&M activities of plant

10. Photos of Meetings / Site Visits and Activities

PACKAGE - I

PHAPHAMAU FACILITY

FCR: MS item painting work in progress

MPS – Finishing and MS item painting work in progress

PHAPHAMAU FACILITY

STP campus: Area development is in progress

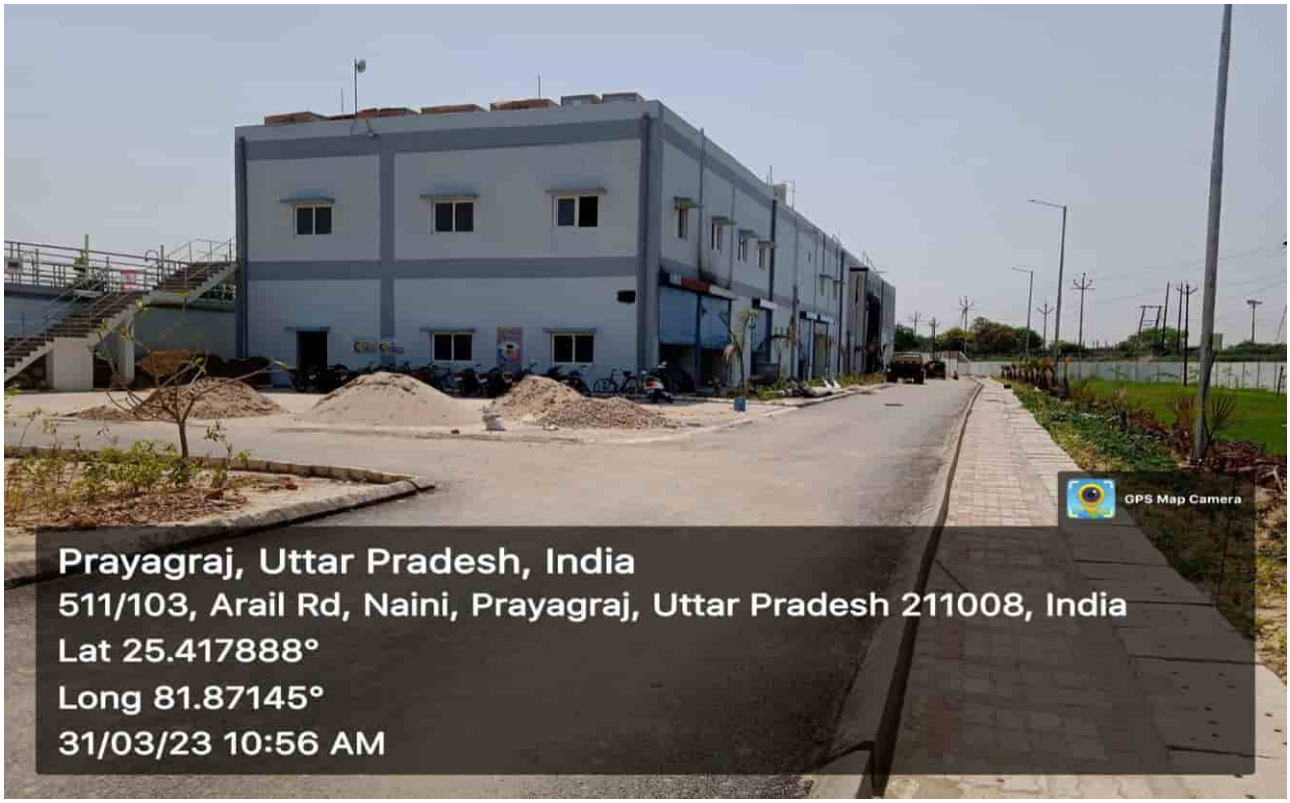
STP campus – Road & Drains and Curb sone work under progress

PHAPHAMAU FACILITY

Process Building (STP) – Finishing work is in progress

Panel Room – Panel installation and testing completed

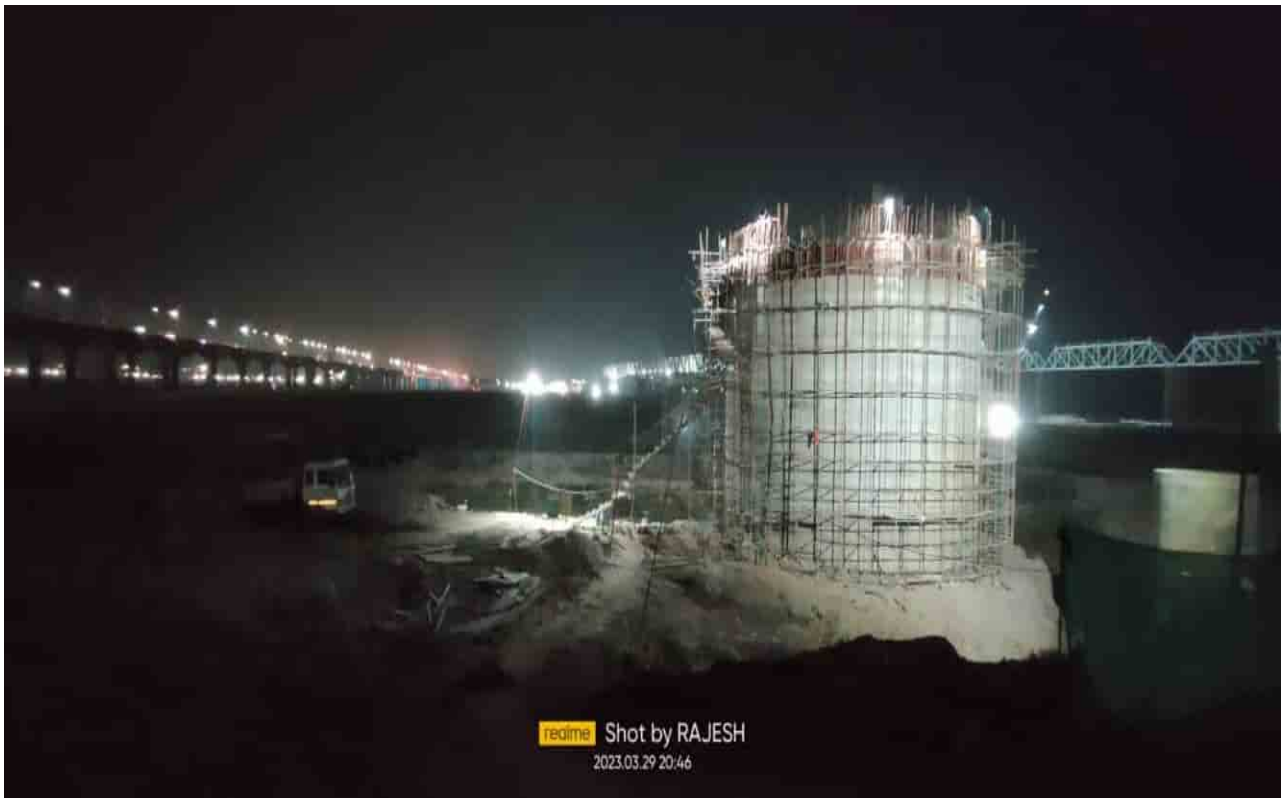
NAINI-II FACILITY



Naini-II (STP Campus)– Road and area development work is in progress

Naini-II (MPS) – Area Development work is in progress

JHUNSI FACILITY



Shastri Bridge SPS – Construction under progress

Jhunsi MPS – Finishing as well as E&M work under progress

JHUNSI FACILITY

FCR – E&M work is under progress

Process Building – Finishing, E&M work is under progress

11. Outward Register

List of key design & documents were reviewed by Project Engineer during this period as below.

Sr. No.	PE Transmittal/ Ref No	Description	Outward Date	To (Organization)
1.	AIPL/NMCG/PRAYAG/1573	Observation on O & M Monthly Progress report for the month of January, 2023 of Package – II	6-Mar-23	S.E.-2 Circle - UPJN
2.	AIPL/NMCG/PRAYAG/1574	Regarding reimbursement of chemical and repair & maintenance charges for treatment of additional flow in STPs under Package-II & Package-III	11-Mar-23	S.E.-2 Circle - UPJN
3.	AIPL/NMCG/PRAYAG/1575	Claim for Setup for battery Bank for Solar Power Plant of Pkg-I STP's in lieu of Change in Law.	11-Mar-23	S.E.-2 Circle - UPJN
4.	AIPL/NMCG/PRAYAG/1576	Regarding addition of 5 drains in Mahewaghat SPS and 1 drain in Basna Nalla SPS.	13-Mar-23	S.E.-2 Circle - UPJN
5.	AIPL/NMCG/PRAYAG/1577	Observation onof O & M Monthly Progress report for the month of February, 2023 of Package – II	15-Mar-23	S.E.-2 Circle - UPJN
6.	AIPL/NMCG/PRAYAG/1578	Approval on O&M charges and power charges for Naini II and Phaphamau STP after the trail run till achievement of COD for Package-I.	18-Mar-23	S.E.-2 Circle - UPJN
7.	AIPL/NMCG/PRAYAG/1579	Regarding the Observation onof MPR of Feb'23	18-Mar-23	S.E.-2 Circle - UPJN
8.	AIPL/NMCG/PRAYAG/1580	Observation on O & M Monthly Progress report for the month of February, 2023 of Package – III	18-Mar-23	S.E.-2 Circle - UPJN
9.	AIPL/NMCG/PRAYAG/1581	Inspections Reports of Package-II facilities	21-Mar-23	S.E.-2 Circle - UPJN

Sr. No.	PE Transmittal/ Ref No	Description	Outward Date	To (Organization)
10.	AIPL/NMCG/PRAYAG/1582	Inspection Reports of Package-III facilities	21-Mar-23	S.E.-2 Circle - UPJN
11.	AIPL/NMCG/PRAYAG/1583	Observation on revised O & M Monthly Progress report for the month of February, 2023 of Package – II	22-Mar-23	S.E.-2 Circle - UPJN
12.	AIPL/NMCG/PRAYAG/1584	Regarding Slow Progress of construction works at Phaphamau facilities under Package-I	22-Mar-23	S.E.-2 Circle - UPJN
13.	AIPL/NMCG/PRAYAG/1585	Regarding Slow Progress of construction works at Jhunsi facilities under Package-I	24-Mar-23	S.E.-2 Circle - UPJN
14.	AIPL/NMCG/PRAYAG/1586	Reg. variation to scope of work for Jhunsi Facility location change under Package-I as per Clause 21 of Concession Agreement	25-Mar-23	S.E.-2 Circle - UPJN
15.	AIPL/NMCG/PRAYAG/1587	Payment certification for O&M work of Package-II of Quarter-VII	25-Mar-23	S.E.-2 Circle - UPJN
16.	AIPL/NMCG/PRAYAG/1588	Inspection Reports of Phaphamau and Jhunsi Facilities under Package-I	27-Mar-23	S.E.-2 Circle - UPJN
17.	AIPL/NMCG/PRAYAG/1589	Approval on O&M charges and power charges for Naini II and Phaphamau STP after the trail run till achievement of COD for Package-I	28-Mar-23	S.E.-2 Circle - UPJN
18.	AIPL/NMCG/PRAYAG/1590	Regarding Slow Progress of construction works at Naini-II facilities under Package-I	31-Mar-23	S.E.-2 Circle - UPJN

12. Inward Register

List of key design & documents were received by Project Engineer during this period as below.

Sr. No.	PWPL / UPJN Transmittal reference number	Description	Date	From
1.	147/PWPL/(PRAYAGRAJ)/33	Regarding reimbursement of chemical and repair & maintenance charges for treatment of additional flow in STPs under Package-II & Package-III	2-Mar-23	PM-1, UPJN
2.	PWPL/UPJN/PRAYAGRAJ/SITE /887	Regarding work progress in Package-I.	6-Mar-23	Prayagraj water private limited
3.	PWPL/UPJN/PRAYAGRAJ/SITE /888	Regarding the submission of MPR of Feb'23	7-Mar-23	Prayagraj water private limited
4.	167/PWPL/(PRAYAGRAJ)/38	Approval on O & M Charges and Power Charges for Phaphamau and Naini-II facitity after the trail run till achievement of COD for Package - I	13-Mar-23	PM-1, UPJN
5.	PWPL/UPJN/PRAYAGRAJ/SITE /888	Regarding permission for Laying of DI Pipe (Rising Main SPS to STP) on Chhatnag Ghat under Jhunsi STP	13-Mar-23	Prayagraj water private limited
6.	PWPL/UPJN/PMCG/077 /22	Submission of drawings for Road & Drain at Jhunsi	13-Mar-23	Prayagraj water private limited
7.	PWPL/UPJN/PRAYAGRAJ/SITE /889	Regarding shutdown of Naini-II Facility for Launder Modification work under Package-I.	14-Mar-23	Prayagraj water private limited
8.	PWPL/UPJN/PRAYAGRAJ/SITE /890	Request regarding status of various pending claims from long	15-Mar-23	Prayagraj water private limited
9.	PWPL/UPJN/PRAYAGRAJ/SITE /891	Regarding cutting of Naini-II STP approach road under Package-I.	20-Mar-23	Prayagraj water private limited

Sr. No.	PWPL / UPJN Transmittal reference number	Description	Date	From
10.	PWPL/UPJN/PRAYAGRAJ/SITE /892	Regarding Reply of Slow Progress of Phaphamau STP Facility under Package-I .	20-Mar-23	Prayagraj water private limited
11.	188/PWPL/(PRAYAGRAJ)/43	Approval on 0&M charges and power charges for Naini II and Phaphamau STP after the trail run till achievenment of COD for Package-I.	20-Mar-23	PM-1, UPJN
12.	196/PWPL/(PRAYAGRAJ)/44	Payment certification for O&M work of Package-II of Quarter-VII	22-Mar-23	PM-1, UPJN
13.	PWPL/UPJN/PRAYAGRAJ/SITE /894	Regarding balance work punch points of Naini-II Facility.	22-Mar-23	PM-1, UPJN
14.	219/PWPL/(PRAYAGRAJ)/44	Regarding slow progress of construction of 16 MLD Jhunsi STP and Shashtri Bridge SPS	28-Mar-23	PM-1, UPJN
15.	PWPL/UPJN/PRAYAGRAJ/SITE /896	Proposal for initiating Trial Operations of Jhunsi STP operation and grant of COD of Package-I.	29-Mar-23	Prayagraj water private limited
16.	PWPL/UPJN/PRAYAGRAJ/SITE /897	Reply letter regarding punch points of Phaphamau Facility.	29-Mar-23	Prayagraj water private limited
17.	PWPL/UPJN/PRAYAGRAJ/SITE /898	Regarding reimbursement of O&M charges for Naini-II & Phaphamau STP till achievement of COD for Package-I	29-Mar-23	Prayagraj water private limited

13. EHS targets, Achievement & compliance report for the month of March 2023

Sr. No.	Goals	Target of the month	Achievement of this Month	Previous Month achievement	Remark
1	Zero total recordable injuries	100%	100%	100%	
2	All personnel Health and Safety inducted	100%	100%	100%	
3	100% incident reporting and investigation	100%	100%	100%	
4	100% adherence of usage of appropriate PPE's at work	100%	100%	100%	

14. Status of statutory permits:

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
	Phaphamau Facility (Package - I)			
1	Power connection (During commissioning Period)	Electricity Board	2 No.	Approved by NMCG vide letter no-Pr-12012/6/ 2018 /PPP / NMCG Dated 24.06.2022 • Power connection at STP is completed. • Power connection at Basna Nalla SPS. is completed.
2	Consent to Establish	State Pollution Control Board (SPCB)	1 No.	Received
3	Tree cutting	Forest Department	88 No.	Received NOC From Forest Dept for Cutting 88 Nos. of trees.
4	Road cutting & crossing	Public Works Department	NA	Not Required
5	Railway Crossing	Commissioner Railway Safety	NA	Not Required

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
6	National Highway cutting & crossing	National Highway Authority of India	1 No.	Permission Received from NH PWD vide letter no. 70/NH-96/330 dated 12th Jan 2022 and work has been completed.
7	Revenue Road cutting & crossing	Panchayat/Local Authority	NA	Not Required
8	Obtaining No Objection Certificate for various sewerage facilities under the ULB for handing them over to JN	ULB/District Administration	NA	Not Required
9	Construction of Weirs/pipeline crossings	Irrigation department/ULB	2 No.	Received
10	Approach Road to new Facilities	Forest Department/ Panchayat/Local Authority/Irrigation Department	NA	Not Required
11	Consent to operate for Existing Facilities	ULB and SPCB	NA	NA
	Naini-II Facility (Package - I)			
1	Power connection (During commissioning Period)	Electricity Board	3 No.	• Approved by NMCG vide letter no-Pr-12012/6/ 2018 /PPP / NMCG Dated 24.06.2022 • Power connection at STP and Mawaiya SPS and Mahewaghat is completed.
2	Consent to Establish	State Pollution Control Board (SPCB)	1 No.	Received
3	Tree cutting	Forest Department	-	Will be applied as and when required, presently not required.
4	Road cutting & crossing	Public Works Department	1 No.	Applied on dated 19.10.2020 for STP main line.

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
				NOC received from Mahewaghat SPS to Naini-II MPS on 08th Dec'2020 from Provincial Division. NOC received from PDA on 03.02.2021.
5	Railway Crossing	Commissioner Railway Safety	1 No.	Permission received from Railway vide Letter No. 86-W/KM/821/L-PRYJ-NYN Dated:16.07.2021
6	National Highway cutting & crossing	National Highway Authority of India	NA	NA
7	Revenue Road cutting & crossing	Panchayat/Local Authority	1 No.	Total 01 nos. NOC received from PDA on 03.02.2021
8	Obtaining No Objection Certificate for various sewerage facilities under the ULB for handing them over to JN	ULB/District Administration	NA	Not Required
9	Construction of Weirs/pipeline crossings	Irrigation department/ULB	6 No.	Received
10	Approach Road to new Facilities	Forest Department/ Panchayat/Local Authority/Irrigation Department	NA	Not Required
11	Consent to operate for Existing Facilities	ULB and SPCB	1 No.	NA
	Jhunsi Facility (Package - I)			
1	Power connection (During commissioning Period)	Electricity Board	2 No.	Approved by NMCG vide letter no-Pr-12012/6/ 2018 /PPP / NMCG Dated 24.06.2022
2	Consent to Establish	State Pollution Control Board (SPCB)	1 No.	Received

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
3	Tree cutting	Forest Department	NA	Not Required
4	Road cutting & crossing	Public Works Department	NA	NA
5	Railway Crossing	Commissioner Railway Safety	1 No.	Permission received from railway vide letter No W/98-13/2020/71/W- DATED 29/03/2022
w	National Highway cutting & crossing	National Highway	NA	NA
7	Revenue Road cutting & crossing	Panchayat/Local Authority	1 No.	Permission received
8	Obtaining No Objection Certificate for various sewerage facilities under the ULB for handing them over to UPJN	ULB/District Administration	NA	Not Required
9	Construction of Weirs/pipeline crossings	Irrigation department/ULB	13 No	Received
10	Approach Road to new Facilities	Forest Department/ Panchayat/Local Authority/Irrigation Depar4ent	NA	Not Required
11	consent to operate for Existing Facilities	ULB and SPCB	NA	NA
12	Laying of Rising main	Irrigation department	NA	Permission for laying of Rising main from Shastri Bridge SPS through Chatnag Ghat is not received till date.

15. Plant & Machinery Status

Sr. No.	Machinery	Phaphamau 14 MLD	Naini II 42 MLD	Jhunsi 16 MLD	Total
1.	JCB	1	-	3	4
2.	Dumper	-	-	-	-
3.	Proclaim	1	-	2	3
4.	Ajax	1	-	1	2
5.	Hydra	1	-	2	3
6.	Roller	-	-	-	-
7.	Submersible Pump 2HP	2	-	4	6
8.	Diesel Pump 5 HP	-	-	1	1
9.	5KV generator	1	1	4	6
10.	Total Station	1	1	2	4
11.	Water tanker	-	-	2	2
12.	Auto level	1	-	1	2
13.	Mixing machine	2	2	4	8
14.	Vibrator	5	5	10	20
15.	Tractor	1	-	1	2
16.	Concrete Chipping Machine	1	-	2	3
17.	Welding Machine	4	2	5	11
18.	Grinding Machine	1	1	7	9
19.	Gas cutting set	1	-	2	3
20.	Chain saw machine	-	-	-	-
21.	Chain Block	-	-	1	1
22.	RM 800	-	-	1	1
23.	Plywood cutting machine	3	3	5	11
24.	Steel cutting machine	4	4	5	13

16. ANNEXURE'S

Annexure- I: KPI REPORTS OF PACKAGE -I, ACTION TAKEN REPORT AND RECOMMENDATION

Annexure- II: KPI REPORTS OF PACKAGE -II, ACTION TAKEN REPORT AND RECOMMENDATION

Annexure- III: KPI REPORTS OF PACKAGE -III, ACTION TAKEN REPORT AND RECOMMENDATION

Annexure- IV: PROJECT ENGINEER ACTIVITY AS PER TOR

Annexure- V: QUALITY CONTROL / QUALITY ASSURANCE

ANNEXURE-I

ACTION TAKEN REPORT AGAINST FEB.23 MONTH RECOMMENDATION AND KPI REPORT FOR PACKAGE-I

Table of Contents

1. JHUNSI STP AND ASSOCIATE INFRASTRUCTURE

1.1 Action taken Report

Date of site visit	1st, 10th, 15th and 21st March 2023
Site Visitor	1. Mr. Surendra Singh Parmar, PM-I, GPCU, UPJN(R), Prayagraj 2. Mr. Tauseef Ahmed, PE, GPCU, UPJN(R), Prayagraj 3. Mr. Satwant Singh, APE, GPCU, UPJN(R), Prayagraj 4. Mr. Gaurav Gupta, AECOM 5. Mr. Gaurav Pandey, AECOM 6. Mr Sudhir Tomar, AECOM 7. Mr. Ashish singhai, PWPL. 8. Mr. Tikam Singh, PWPL. 9. Mr. Vipul kumar Mishra, PWPL, 10. Mr. Pradeep Kumar, PWPL
Name of Facility	16 MLD Jhunsi STP & Associated Infrastructure, Prayagraj.

A) Civil Works: Update work status after action taken by Concessionaire on Feb.23 month recommendation given by Project engineer.

1. At Shastri Bridge SPS, progress of civil construction works is very slow. As per current status, casting work for 18th lift out 19 is in progress. After casting of all lifts, construction works for super structure and other civil works for the SPS will start.
2. At Shastri Bridge SPS, staff quarter, which is to be constructed in campus of Jhunsi STP, is under construction but progress is very slow.
3. At Shastri Bridge SPS, construction of boundary wall and approach road is pending.
4. At all 13 Interception and diversion points, arrangement for conveying sewage from existing nalla to the civil structure is pending.
5. At all 13 Interception and diversion points, repairing work of civil structure which is damaged due to flood is pending.
6. At Jhunsi MPS, epoxy coating in wet well is pending.
7. At Jhunsi MPS, screeding work for floor in open channels for screen is pending.
8. At Jhunsi MPS, installation of door & windows, finishing works are pending.
9. At Jhunsi MPS, landscaping and site development work is pending.
10. At Jhunsi MPS, installation of permanent type display/sign boards is pending.
11. At Jhunsi MPS, permanent arrangement for water supply is pending.
12. At Jhunsi MPS, land filling work is pending
13. At Jhunsi MPS, construction of loading and unloading bay is pending.
14. At Jhunsi STP, rectification for discrepancy regarding outlet launder of tube settlers is pending.
15. At Jhunsi STP, painting work of FCR tank is not started yet. It is suggested to start the painting work at the earliest. Painting should be done as per clause no. 1.4.1 in Schedule-10 of Concession Agreement & as per approved Drawing of FCR tank.
16. At Jhunsi STP, construction of boundary wall is pending.
17. At Jhunsi STP, land filling work is pending.
18. At Jhunsi STP, construction works for Road & Drain are pending.
19. At Jhunsi STP, fixing of hand railing for some parts of STP are pending.
20. At Jhunsi STP, landscaping and development work for complete site is pending.
21. At Jhunsi STP, finishing works for various units of STP are pending.
22. At Jhunsi STP, water proofing over the roof for all units is pending.

23. At Jhunsi STP, laying of effluent pipeline is pending.
24. At Jhunsi STP, construction of brick wall for providing partition in SDU room is pending.
25. At Jhunsi STP, epoxy coating in all water retaining structures is pending.
26. At Jhunsi STP, arrangements for rainwater harvesting are pending.
27. At Jhunsi STP, painting work for some civil structures is pending.
28. At Jhunsi STP, construction of supports for pipeline from MPS to PTU and PTU to CCT is pending.
29. Arrangements for treatment of sewage generated from Trivenipuram Nalla as per point-B in clause no. 3.2.1 of Schedule-1 of Concession Agreement.

B) E&M Works:

1. At Shastri Bridge SPS, all E&M works are pending as civil works are not completed yet.
2. At all 13 Interception and diversion points, all E&M works are pending.
3. At all 13 Interception and diversion points, provide the gate at the inlet of I&D after manual screen for the avoiding of silt collection in manhole and rising main at the time of flood.
4. At Jhunsi MPS, testing & commissioning of submersible pumps is pending.
5. At Jhunsi MPS, testing & commissioning of mechanical screens is pending.
6. At Jhunsi MPS, installation of chute for screw conveyor of mechanical screens is pending.
7. At Jhunsi MPS, installation of sluice gate in partition wall in downstream side of screens is pending.
8. At Jhunsi MPS, installation of penstocks and spindles for all gates is pending.
9. At Jhunsi MPS, installation of pressure gauges in discharge lines of all pumps is pending.
10. At Jhunsi MPS, installation of pressure transmitter in header line of pumps is pending.
11. At Jhunsi MPS, installation of differential level transmitter for mechanical screen is pending.
12. At Jhunsi MPS, installation of level transmitter in raw sewage sump is pending.
13. At Jhunsi MPS, installation of outlet flowmeter is completed but it is not working.
14. At Jhunsi MPS, installation of fire alarm and fire-fighting system is not started yet.
15. At Jhunsi MPS, installation of CCTV system is not started yet.
16. At Jhunsi MPS, work for ventilation system is pending.
17. At Jhunsi MPS, installation of EOT is pending.
18. At Jhunsi MPS, painting for MS structures inside the facility is pending.
19. At Jhunsi MPS, testing & commissioning of electrical panels is pending.
20. At Jhunsi MPS, cable laying works for both LT, C&I are pending.
21. At Jhunsi MPS, power connections for all E&M equipment are pending.
22. At Jhunsi MPS, leakage test for sluice gates/valves is pending.
23. At Jhunsi MPS, installation of permanent lights for complete unit are pending.
24. At Jhunsi STP, installation of chute for screw conveyor of mechanical screens is pending.
25. At Jhunsi STP, installation of sluice gate at the inlet of mechanical screen no. 1 (1500*600 mm) is pending. Currently, sluice gate is not available at site.
26. At Jhunsi STP, installation of electrical actuators for inlet and outlet gates of manual screen are pending.
27. At Jhunsi STP, cable laying, power connections for both mechanical screens and electrical actuator are pending
28. At Jhunsi STP, testing & commissioning of grit removal system is pending. Pipeline laying for scum removal is pending.
29. At Jhunsi STP, installation of penstocks and spindles for all gates of both grit removal units and distribution chamber after grit removal units are pending.
30. At Jhunsi STP, cable laying, power connections for both grit removal units are pending.
31. At Jhunsi STP, pipeline laying for scum removal is pending.

32. At Jhunsi STP, E&M works of screw conveyor and other arrangements for grit removal units is pending
33. At Jhunsi STP, completion of discharge piping, testing & commissioning, cable laying, power connections and installation of LPBS of grit blowers is pending.
34. At Jhunsi STP, discharge piping, cable laying, power connections, erection of air dryer, testing & commissioning of air compressor is pending.
35. At Jhunsi STP, installation, cable laying, power connections and laying of associated pipelines of poly dosing system are pending.
36. At Jhunsi STP, installation of penstocks and spindles for all sluice gates in FCR is pending.
37. At Jhunsi STP, installation of dummy plate in header line of aeration blowers is pending.
38. At Jhunsi STP, testing & commissioning of aeration blowers is pending.
39. At Jhunsi STP, installation of HMI screens and testing of VFD panels for aeration blowers is pending.
40. At Jhunsi STP, work for cooling water line to air line from aeration blowers is pending.
41. At Jhunsi STP, laying of all pipelines from PTU to FCR is pending and installation of flowmeters in these pipelines are pending.
42. At Jhunsi STP, installation of I-nuts and diffusers in FCR tanks is pending.
43. At Jhunsi STP, installation of plants for FCR tanks are pending.
44. At Jhunsi STP, installation of bio-modules for FCR tanks are pending. Currently, the bio-modules are not available at site as they are sent to OEM's manufacturing unit for some rectification work.
45. At Jhunsi STP, installation of chlorination system and laying of related pipelines is pending.
46. At Jhunsi STP, installation of booster pumps for chlorination booster pump and laying of related pipelines is pending.
47. At Jhunsi STP, electrical works related to chlorination system are pending.
48. At Jhunsi STP, E&M works for leak detection system and neutralization tower are pending.
49. At Jhunsi STP, commissioning of sludge dewatering system is pending
50. At Jhunsi STP, commissioning of lime dosing system is pending
51. At Jhunsi STP, laying of overflow pipeline for sludge dewatering unit is pending.
52. At Jhunsi STP, laying of supernatant pipeline from dewatering building to MPS is pending.
53. At Jhunsi STP, installation, cable laying, power connections of dewatering feed pumps is pending.
54. At Jhunsi STP, laying of sludge pipeline from dewatering feed pumps to dewatering building is pending.
55. At Jhunsi STP, installation of chimney for DG as per CPCB norms is pending.
56. At Jhunsi STP, construction of earthing pits is pending.
57. At Jhunsi STP, cable laying work, testing & commissioning of DG sets is pending.
58. At Jhunsi STP, cable dressing, cable connection, testing & commissioning of HT panel is pending.
59. At Jhunsi STP, cable dressing, cable connection, testing & commissioning of transformers is pending.
60. At Jhunsi STP, cable dressing, cable connection, testing & commissioning of main MCC panel is pending.
61. At Jhunsi STP, cable dressing, cable connection, testing & commissioning of APFC panels is pending.
62. At Jhunsi STP, cable dressing, cable connection, testing & commissioning of DG panel is pending.
63. At Jhunsi STP, erection of spool piece in bypass line of STP is pending.
64. At Jhunsi STP, installation of differential level transmitter for mechanical screen is pending.

65. At Jhunsi STP, installation of inlet and outlet analysers is pending.
66. At Jhunsi STP, installation of DO analysers for FCR tanks is pending.
67. At Jhunsi STP, installation of chlorine analyser at the outlet of STP is pending
68. At Jhunsi STP, installation of outlet flowmeter is pending.
69. At Jhunsi STP, installation of various instruments related to equipment are pending.
70. At Jhunsi STP, installation works for solar power plant are not started yet.
71. At Jhunsi STP, C&I cable laying for complete site is pending.
72. At Jhunsi STP, erection & commissioning works of PLC system are pending.
73. At Jhunsi STP, erection & commissioning works of SCADA system are pending.
74. At Jhunsi STP, work for service water pipe at all points is pending.
75. At Jhunsi STP, testing & commissioning, cable laying, power connections for treated effluent pumps is pending.
76. At Jhunsi STP, testing & commissioning of EOTs for all units is pending.
77. At Jhunsi STP, installation of fire fighting system with fire water pipe network and fire fighting arrangements within the key structures/buildings including fire alarm System is pending.
78. At Jhunsi STP, work for providing potable water reservoir and related pipeline is pending for all units.
79. At Jhunsi STP, installation of Close Circuit Television (CCTV) System which includes cameras, installation accessories, hardware, and software to store data as per the Schedule 10 of Concession Agreement is pending.
80. At Jhunsi STP, works for set-up of laboratory are pending. Laboratory instruments are still not available at site.
81. At Jhunsi STP, installation of permanent lights inside and outside the units for complete site are pending.
82. At Jhunsi STP, installation of asset management system is not started yet.
83. At Jhunsi STP, work for ventilation system is pending.
84. At Jhunsi STP, painting work for various MS structure installed at site is pending.
85. At Jhunsi STP, sluice valve of 400 mm is installed in place of approved size of 600mm in bypass line of STP which is not as per valve schedule.
86. At Jhunsi STP, leakage test for sluice gates/valves is pending.

2. NAINI-II STP AND ASSOCIATE INFRASTRUCTURE

2.1 Action taken report

Date of site visit	14th and 29th March 2023
Site Visitor	1. Mr. Surendra Singh Parmar, PM-I, GPCU, UPJN(R), Prayagraj 2. Mr. Tauseef Ahmed, PE, GPCU, UPJN(R), Prayagraj 3. Mr. Satwant Singh, APE, GPCU, UPJN(R), Prayagraj 4. Mr. Gaurav Gupta, AECOM 5. Mr. Gaurav Pandey, AECOM 6. Mr Sudhir Tomar, AECOM 7. Mr. Ashish singhai, PWPL. 8. Mr. Tikam Singh, PWPL. 9. Mr. Vipul kumar Mishra, PWPL, 10. Mr. Pradeep Kumar, PWPL
Name of Facility	42 MLD Naini-II STP & Associated Infrastructure, Prayagraj.

A) Civil Works: Update work status after action taken by Concessionaire on Feb.23 month recommendation given by Project engineer.

1. At I&D of Saccha Baba Nall and Khakharauni Nalla some civil construction work is pending.
2. At Mawaiya SPS, installation of doors and windows, finishing works are pending.
3. At Mawaiya SPS, installation main gate for panel room is pending.
4. At Mawaiya SPS, construction of loading and unloading bay is pending.
5. At Mawaiya SPS, landscaping and site development work is pending.
6. At Mawaiya SPS, installation of permanent type display/sign boards is pending.
7. At Mawaiya SPS, permanent arrangement for water supply is pending.
8. At Mahewaghat SPS, staff quarter, which is to be constructed in campus of Naini-II STP, is under construction but progress is very slow.
9. At Mahewaghat SPS, installation of doors and windows, finishing works are pending.
10. At Mahewaghat SPS, construction of loading and unloading bay is pending.
11. At Mahewaghat SPS, landscaping and site development work is pending.
12. At Mahewaghat SPS, installation of permanent type display/sign boards is pending.
13. At Mahewaghat SPS, permanent arrangement for water supply is pending.
14. At Naini-II STP, painting work of FCR tank is not started yet. It is suggested to start the painting work at the earliest. Painting should be done as per clause no. 1.4.1 in Schedule-10 of Concession Agreement & as per approved Drawing of FCR tank.
15. At Naini-II STP, construction works for Road & Drain are pending.
16. At Naini-II STP, landscaping work for the site is pending.
17. At Naini-II STP, installation of doors and windows, finishing works for the STP are pending.
18. At Naini-II STP, water proofing for all units is pending.
19. At Naini-II STP, arrangements for rainwater harvesting are pending.
20. At Naini-II STP, construction of plinth protection for all units is pending.
21. At Naini-II STP, concreting work is required at the top of parshall flume.

B) E&M Works:

1. At all Interception and diversion points, provide the gate at the inlet of I&D after manual screen for avoiding of silt collection in manhole and rising main at the time of flood.
2. At I&D of Saccha Baba Nall and Khakharauni Nalla E&M work is pending.
3. At Mawaiya SPS, commissioning of differential level transmitter for mechanical screens is pending.
4. At Mawaiya SPS, service water line connection to screw conveyor is pending.
5. At Mawaiya SPS, installation of chimney for DG sets as per CPCB norms is pending.
6. At Mawaiya SPS, commissioning of harmonic filter panel is pending.
7. At Mawaiya SPS, commissioning of ventilation system is pending.
8. At Mawaiya SPS, installation of fire-fighting system is pending.
9. At Mawaiya SPS, painting of doors and windows is pending.
10. At Mawaiya SPS, MS structure painting work is pending.
11. At Mawaiya SPS, VFD for pump no. 4 is not working.
12. At all I&Ds Mahewaghat SPS, installation of manual screen at overflow is pending.
13. At Mahewaghat SPS, commissioning of differential level transmitter for mechanical screens is pending.
14. At Mahewaghat SPS, VFD for one pump is not working.
15. At Mahewaghat SPS, feedback from pumps is not coming in SCADA system.
16. At Mahewaghat SPS, testing of fire alarm and fire extinguisher system is pending.
17. At Mahewaghat SPS, commissioning of harmonic filter panel is pending.
18. At Mahewaghat SPS, MS Structure support painting work is pending.
19. At Mahewaghat SPS, installation of chute for screw conveyor of mechanical screen is pending.
20. At Mahewaghat SPS, commissioning of ventilation system is pending.
21. At Naini-II MPS, commissioning of differential level transmitter for mechanical screens is pending.
22. At Naini-II MPS, installation partition gate in wet well is pending.
23. At Naini-II MPS, shutter painting work is pending in panel room.
24. At Naini-II MPS, installation of fire-fighting system is pending.
25. At Naini-II MPS, installation of chequered plate in battery room is pending.
26. At Naini-II STP, commissioning of differential level transmitter for mechanical screens is pending.
27. At Naini-II STP, commissioning of harmonic filter panel is pending.
28. At Naini-II STP, knob for ON/OFF switch for APFC Panel no.02 is damaged.
29. At Naini-II STP, commissioning of HMIs for VFD panels is pending.
30. At Naini-II STP, calibration of inlet and outlet analyzers are working but its calibration is pending.
31. At Naini-II STP, DO analyzers for FCR tanks are working but its calibration is pending.
32. At Naini-II STP, solenoid valves for DO analyzers at FCR tanks are not installed for automatic cleaning of sensors.
33. At Naini-II STP, terminal plate for motor of blower no. 4 is damaged.
34. At Naini-II STP, installation of EOT in blower room is pending.
35. At Naini-II STP, calibration of outlet flowmeter is pending.
36. At Naini-II STP, painting of pipes for air compressor is pending.
37. At Naini-II STP, installation of EOT for PTU is pending.
38. At Naini-II STP, laying of scum line form grit chamber to sludge tank is pending.
39. At Naini-II STP, installation of chute for grit conveyor is pending.
40. At Naini-II STP, commissioning of lime dosing system is pending.

41. At Naini-II STP, installation of various instruments related to equipment are pending.
42. At Naini-II STP, transmission of signals from outlet analyzer to CPCB servers is pending.
43. At Naini-II STP, solar power plant is not operating at full load.
44. At Naini-II STP, work for installation of PLC/SCADA system is not completed yet as feedbacks from several equipment at site are still not coming to the SCADA system.
45. At Naini-II STP, it is required to use more colors and animation in SCADA system for making it more distinguished and user-friendly. Also, report generation regarding running hours of equipment and flow is pending in SCADA system.
46. At Naini-II STP, work for cooling water line to air line from aeration blowers is pending.
47. At Naini-II STP, work for providing potable water reservoir and related pipeline is pending.
48. At Naini-II STP, installation of fire fighting system with fire water pipe network and fire fighting arrangements within the key structures/buildings including fire alarm System is pending.
49. At Naini-II STP, installation of Close Circuit Television (CCTV) System which includes cameras, installation accessories, hardware and software to store data as per the Schedule 10 of Concession Agreement is pending.
50. At Naini-II STP, installation of chimney for DG sets as per CPCB norms is pending.
51. At Naini-II STP, compressors are not taken in operation yet.
52. At Naini-II STP, works for leak detection system and neutralization tower are pending.
53. At Naini-II STP, installation of asset management system is not started yet.
54. At Naini-II STP, work for ventilation system in various units is pending.
55. At Naini-II STP, painting work for various MS structure installed at site is pending.
56. At Naini-II STP, leakage test for sluice gates/valves is pending.

2.2 KPI Report

Naini-2 STP, 42 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design-25 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design-<9)	Final pH (Design-6.5 to 9.0)	Inlet BOD (Design-<250 mg/l)	Final BOD (Design -<20 mg/l)	Inlet COD (Design-<500 mg/l)	Final COD (Design -<50 mg/l)	Inlet TSS (Design-<500 mg/l)	Final TSS (Design <30 mg/l)	Inlet (Design - NA)	Final (Design -<1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Mar-23	36210	36.21	7.63	7.76	160	24	344	40	324	25	NA	700	0.3	25.4	1700000	Plant availability is 100%
2-Mar-23	36910	36.91	7.49	7.63	155	26	356	36	317	23	NA	700	0.2	23.6	1300000	Plant availability is 100%
3-Mar-23	35980	35.98	7.42	7.58	170	25	348	44	308	24	NA	500	0.3	23.6	1400000	Plant availability is 100%
4-Mar-23	35620	35.62	7.29	7.46	165	26	364	40	325	20	NA	800	0.2	25.7	1700000	Plant availability is 100%
5-Mar-23	36710	36.71	7.59	7.65	155	24	324	44	292	24	NA	600	0.3	25.5	1300000	Plant availability is 100%
6-Mar-23	36940	36.94	7.52	7.57	160	25	302	40	294	23	NA	700	0.2	21.4	1400000	Plant availability is 100%
7-Mar-23	36600	39.89	7.46	7.63	170	24	324	36	309	21	NA	500	0.3	26.6	1700000	Plant availability is 100%
8-Mar-23	36820	46.74	7.49	7.58	150	26	332	40	304	22	NA	400	0.2	25.2	1400000	Plant availability is 100%
9-Mar-23	36820	47.99	7.76	7.55	155	23	344	44	314	18	NA	700	0.3	25.3	1700000	Plant availability is 100%
10-Mar-23	36520	36.52	7.61	7.48	165	25	336	40	308	21	NA	600	0.2	24.6	1300000	Plant availability is 100%
11-Mar-23	35210	36.21	7.42	7.57	155	24	340	36	316	23	NA	400	0.3	25.1	1700000	Plant availability is 100%
12-Mar-23	35890	37.52	7.73	7.6	165	25	320	40	298	20	NA	600	0.3	25.4	1400000	Plant availability is 100%
13-Mar-23	36850	36.85	7.47	7.63	170	24	344	36	331	21	NA	700	0.2	23.8	1300000	Plant availability is 100%
14-Mar-23	37410	37.41	7.39	7.69	165	23	336	44	313	19	NA	800	0.2	23.3	1400000	Plant availability is 100%
15-Mar-23	1920	1.92														Plant was shutdown from 15/3 to 22/3/23 due to launder modification work.
16-Mar-23	3830	3.83														
17-Mar-23	1154	1.154														
18-Mar-23	609	0.609														
19-Mar-23	1840	1.84														
20-Mar-23	5310	5.31														
21-Mar-23	3010	3.01														
22-Mar-23	10210	10.21	7.38	7.56	150	24	324	44	282	15	NA	500	0.3	24.6	1400000	Plant availability is 100%
23-Mar-23	31250	31.25	7.46	7.64	165	26	316	36	301	20	NA	700	0.3	23.4	1300000	Plant availability is 100%
24-Mar-23	33220	33.22	7.56	7.68	155	27	340	40	281	17	NA	600	0.2	25.6	1400000	Plant availability is 100%
25-Mar-23	35680	35.68	7.31	7.52	150	26	318	36	293	24	NA	700	0.2	24.1	1700000	Plant availability is 100%
26-Mar-23	34870	34.87	7.28	7.57	160	25	324	40	308	25	NA	500	0.3	25.4	1400000	Plant availability is 100%
27-Mar-23	36210	36.21	7.41	7.67	155	26	328	36	316	23	NA	500	0.2	25.00	1300000	Plant availability is 100%
28-Mar-23	35320	35.32	7.39	7.48	160	22	344	44	326	20	NA	700	0.2	25.2	1300000	Plant availability is 100%
29-Mar-23	37450	37.45	7.52	7.78	165	24	356	48	331	27	NA	400	0.3	23.6	1700000	Plant availability is 100%
30-Mar-23	36790	36.79	7.43	7.61	155	24	348	40	319	24	NA	600	0.2	24.4	1400000	Plant availability is 100%
31-Mar-23	36680	36.68	7.54	7.81	170	26	312	48	280	28	NA	500	0.3	23.9	1400000	Plant availability is 100%
Average	**27607.84**	**28.48**	**7.48**	**7.61**	**160.21**	**24.83**	**334.33**	**40.50**	**307.50**	**21.96**	**NA**	**600.00**	**0.25**	**24.57**	**1458333.33**	

Source: Logbook of Laboratory at Sewage Treatment Plant

3. PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE

3.1 Action taken report

Date of site visit	4th, 9th and 17th March 2023
Site Visitor	1. Mr. Surendra Singh Parmar, PM-I, GPCU, UPJN(R), Prayagraj 2. Ms. Shilpa, AE, UPJN 3. Mr. Nirender, JE, UPJN 4. Mr. Gaurav Gupta, AECOM 5. Mr. Gaurav Pandey, AECOM 6. Mr. Sudhir Tomar, AECOM 7. Mr. Ashish singhai, PWPL. 8. Mr. Tikam Singh, PWPL. 9. Mr. Rahul Chaudhary, PWPL. 10. Mr. Vipul kumar Mishra, PWPL. 11. Mr. Devkant, PWPL.
Name of Facility	14 MLD Phaphamau STP & Associated Infrastructure

A) Civil Works: Update work status after action taken by Concessionaire on Feb.23 month recommendation given by Project engineer.

1. At Basna Nalla SPS, flooring work, fixing of kota Stone and tiles is pending for complete site is pending.
2. At Basna Nalla SPS, fixing of hand railing for some parts of SPS is pending.
3. At Basna Nalla SPS, construction of boundary wall and approach road is pending.
4. At Basna Nalla SPS, epoxy coating in wet well, painting work and water proofing over the roof is pending.
5. At Basna Nalla SPS, staff quarter, which is to be constructed in campus of Phaphamau STP, is under construction but progress is very slow.
6. At Basna Nalla SPS, construction of RCC chamber for flow meter is pending.
7. At Basna Nalla SPS, installation of door & windows, finishing works are pending.
8. At Basna Nalla SPS, plumbing works for toilet are pending.
9. At Basna Nalla SPS, repairing of taper wall after weir is pending.
10. At Basna Nalla SPS, it is required to provide strength to temporary bund required for diverting sewage to tapping point. Breakage of this bund is very frequent due to which raw water goes to the river without any treatment.
11. At Basna Nalla SPS, construction of loading and unloading bay is pending.
12. At Basna Nalla SPS, landscaping and site development work is pending.
13. At Basna Nalla SPS, installation of permanent type display/sign boards is pending.
14. At Basna Nalla SPS, permanent arrangement for water supply is pending.
15. At Shantipuram MPS, glass fitting is required for air vents in panel room of MPS.
16. At Shantipuram MPS, finishing of floor below electrical panel of mechanical screen and screw conveyer is pending in MPS.
17. At Shantipuram MPS, landscaping and site development work is pending.
18. At Shantipuram MPS, installation of permanent type display/sign boards is pending.
19. At Shantipuram MPS, permanent arrangement for water supply is pending.
20. At tapping point of Basna Nalla, it is required to provide strength to bund required for diverting sewage to tapping point. Breakage of this bund is very frequent due to which raw water goes to the river without any treatment.

21. At Phaphamau STP, rectification for discrepancy regarding outlet launder of tube settlers is completed but testing of the same is pending at full flow.
22. At Phaphamau STP, painting work of FCR tank is not started yet. It is suggested to start the painting work at the earliest. Painting should be done as per clause no. 1.4.1 in Schedule-10 of Concession Agreement & as per approved drawing of FCR tank.
23. At Phaphamau STP, construction works for road & drain are pending.
24. At Phaphamau STP, fixing of hand railing for some parts of STP are pending.
25. At Phaphamau STP, landscaping and development work for complete site is pending.
26. At Phaphamau STP, finishing works for various units of STP are pending.
27. At Phaphamau STP, water proofing over the roof for all units is pending.
28. At Phaphamau STP, rectification required for leakage from chamber in which screw conveyor for grit removal unit is pending. is found in Grid Screw chamber.
29. At Phaphamau STP, installation of partition wall inside laboratory is pending.
30. At Phaphamau STP, construction of plinth protection for all units is pending.
31. At Phaphamau STP, construction of boundary wall near main gate is pending.
32. At Phaphamau STP, arrangements for rainwater harvesting are pending.

B) E&M Works:

1. At shantipuram and Basna Nalla Interception and diversion points, provide the gate at the inlet of I&D after manual screen for the avoiding of silt collection in manhole and rising main at the time of flood.
2. At Basna Nalla SPS, installation of permanent lights inside units and outside area are pending.
3. At Basna Nalla SPS, installation of level transmitter in raw sewage sump is pending.
4. At Basna Nalla SPS, work for installation of PLC system is completed. Transmission of signals from SCADA system of Basna Nalla SPS to SCADA system of Phaphamau STP is pending.
5. At Basna Nalla SPS, installation of EOT is completed but its commissioning work is pending.
6. At Basna Nalla SPS, installation of fire alarm and firefighting system is pending.
7. At Basna Nalla SPS, installation of CCTV system is not started yet.
8. At Basna Nalla SPS, work for ventilation system is pending.
9. At Basna Nalla SPS, painting for MS structure inside the facility is pending.
10. At Basna Nalla SPS, installation of sluice gate in partition wall in downstream side of screens is pending.
11. At Basna Nalla SPS, it is required to provide hand trolley for collecting waste from Screw conveyor of mechanical screens.
12. At Basna Nalla SPS, leakage test for sluice gates/valves is pending.
13. At Basna Nalla SPS, pressure transmitter in header line is installed but it is not working.
14. At Basna Nalla SPS, some fault indications were coming even when the HT panel was in operation. Rectification of this problem is required.
15. At Basna Nalla SPS, UPS system is not working.
16. At Shantipuram MPS, support installation is required for pipeline coming from screw conveyor of grit removal unit.
17. At Shantipuram MPS, installation of chute for screw conveyor of mechanical screens is pending.
18. At Shantipuram MPS, leakage test for sluice gates/valves is pending.
19. At Shantipuram MPS, three out of five pumps are working. Remaining two pumps are not working due to problem in VFDs.

20. At Shantipuram MPS, installation of fire alarm is completed but its commissioning work is pending. Also, installation of firefighting arrangement is pending.
21. At Shantipuram MPS, installation of CCTV system is pending.
22. At Shantipuram MPS, installation of EOT is completed but its commissioning is pending.
23. At Shantipuram MPS, pressure transmitter in header line is installed but it is not working.
24. At Phaphamau STP, 1 out of 2 grit removal systems is working, 1 is in maintenance. Commissioning of grit removal system from OEM side is pending. Pipeline laying for scum removal is pending.
25. At Phaphamau STP, installation of inlet analyzer is completed but its calibration is pending.
26. At Phaphamau STP, installation of outlet analyzer is Completed. Calibration for the same was checked on the day of visit, which was found OK, but it is under observation for checking its performance.
27. At Phaphamau STP, transmission of signals from outlet analyzer to CPCB servers is pending.
28. At Phaphamau STP, chlorine analyzer at the outlet of STP is working but its calibration is pending.
29. At Phaphamau STP, installation of DO analyzers for FCR tanks is completed but they were not found running accurately. Rectification of the problem is required. Also, automatic cleaning arrangement for the sensors of DO analyzers must be made operational at the earliest.
30. At Phaphamau STP, flowmeters in pipelines from PTU to FCR are working but they are showing accurate flow at present. Also, its calibration from OEM side is pending
31. At Phaphamau STP, outlet flowmeter is not working.
32. At Phaphamau STP, installation of various instruments related to equipment are pending.
33. At Phaphamau STP, sludge dewatering building is not in operation due to problem in dewatering feed pumps.
34. At Phaphamau STP, commissioning of lime dosing system is pending.
35. At Phaphamau STP, poly dosing system is in operation. One out of two pumps is working and one is in maintenance. Grouting work for base frame is pending.
36. At Phaphamau STP, installation of solar power plant is no completed yet.
37. At Phaphamau STP, work for installation of PLC/SCADA system is not completed yet as feedbacks from several equipment at site are still not coming to the SCADA system.
38. At Phaphamau STP, it is required to use more colors and animation in SCADA system for making it more distinguished and user-friendly. Also, report generation regarding running hours of equipment and flow is pending in SCADA system.
39. At Phaphamau STP, installation of EOTs for all units are pending.
40. At Phaphamau STP, work for cooling water line to air line from aeration blowers is pending.
41. At Phaphamau STP, installation of HMIs in VFD panel room of aeration blowers is pending.
42. At Phaphamau STP, work for providing potable water reservoir and related pipeline is pending.
43. At Phaphamau STP, installation of fire fighting system with fire water pipe network and fire fighting arrangements within the key structures/buildings including fire alarm System is pending.
44. At Phaphamau STP, installation of Close Circuit Television (CCTV) System which includes cameras, installation accessories, hardware and software to store data as per the Schedule 10 of Concession Agreement is pending.
45. At Phaphamau STP, works for set-up of laboratory are pending. Laboratory instruments are still not available at site.
46. At Phaphamau STP, installation of chimney for DG as per CPCB norms is pending.

47. At Phaphamau STP, compressors are not taken in operation yet. Pipeline and installation of its supports, painting work is pending.
48. At Phaphamau STP, leakage rectification from poppet valve at inlet of tubesettlers is required.
49. At Phaphamau STP, works for leak detection system and neutralization tower are pending.
50. At Phaphamau STP, installation of asset management system is not started yet.
51. At Phaphamau STP, work for ventilation system in various units is pending.
52. At Phaphamau STP, painting work for various MS structure installed at site is pending.
53. At Phaphamau STP, leakage test for sluice gates/valves is pending.
54. At Phaphamau STP, sluice valve of 600 mm is installed in place of approved size of 500mm in bypass line of STP which is not as per approved valve schedule.

3.2 KPI Report

Phaphamau STP, 14 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design-10 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design-<9)	Final pH (Design-6.5 to 8.0)	Inlet BOD (Design-<250 mg/l)	Final BOD (Design-<20 mg/l)	Inlet COD (Design-<500 mg/l)	Final COD (Design-<50 mg/l)	Inlet TSS (Design-<500 mg/l)	Final TSS (Design-<30 mg/l)	Inlet (Design-NA)	Final (Design-<1000 MPN/100 ml)	Final (Design-0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Mar-23	9190	9.19	7.31	7.74	160	14	360	36	328	22	NA	400	0.3	25.54	1400000	Plant availability is 100%
2-Mar-23	9210	9.21	7.35	7.69	155	15	368	40	332	24	NA	500	0.2	25.56	1700000	Plant availability is 100%
3-Mar-23	9090	9.09	7.32	7.74	165	16	372	44	328	23	NA	600	0.3	23.62	1300000	Plant availability is 100%
4-Mar-23	9110	9.11	7.39	7.75	155	14	360	40	310	21	NA	500	0.2	23.75	1400000	Plant availability is 100%
5-Mar-23	8160	8.16	7.35	7.71	160	15	364	36	327	25	NA	400	0.3	24.91	1300000	Plant availability is 100%
6-Mar-23	7950	7.95	7.28	7.67	165	16	356	32	318	23	NA	600	0.2	23.42	1700000	Plant availability is 100%
7-Mar-23	7170	7.17	7.31	7.72	170	17	368	40	315	24	NA	500	0.3	25.17	1300000	Plant availability is 100%
8-Mar-23	8230	8.23	7.29	7.69	160	16	360	36	322	22	NA	400	0.2	24.89	1400000	Plant availability is 100%
9-Mar-23	8320	8.32	7.28	7.72	165	14	360	32	328	23	NA	500	0.3	23.90	1700000	Plant availability is 100%
10-Mar-23	7430	7.43	7.31	7.72	130	16	368	36	310	21	NA	600	0.3	25.21	1300000	Plant availability is 100%
11-Mar-23	7230	7.23	7.33	7.68	155	15	356	40	316	24	NA	400	0.2	24.57	1400000	Plant availability is 100%
12-Mar-23	7030	7.03	7.25	7.69	145	14	352	32	315	22	NA	600	0.3	25.88	1700000	Plant availability is 100%
13-Mar-23	8560	8.56	7.32	7.75	140	16	356	36	317	23	NA	500	0.2	25.99	1400000	Plant availability is 100%
14-Mar-23	9160	9.16	7.25	7.63	150	18	368	40	332	25	NA	600	0.3	23.39	1400000	Plant availability is 100%
15-Mar-23	8230	8.23	7.42	7.69	155	18	348	36	295	27	NA	700	0.2	24.16	1700000	Plant availability is 100%
16-Mar-23	8520	8.52	7.28	7.61	150	16	360	44	340	26	NA	600	0.3	24.39	1400000	Plant availability is 100%
17-Mar-23	9120	9.12	7.23	7.64	155	18	372	36	310	25	NA	600	0.2	23.99	1400000	Plant availability is 100%
18-Mar-23	9030	9.03	7.14	7.54	165	17	348	40	298	26	NA	700	0.3	24.02	1300000	Plant availability is 100%
19-Mar-23	9230	9.23	7.42	7.58	145	15	356	32	264	26	NA	400	0.2	25.00	1700000	Plant availability is 100%
20-Mar-23	15050	15.05	7.50	7.74	155	16	364	40	310	26	NA	600	0.3	25.52	1400000	Plant availability is 100%
21-Mar-23	15960	15.96	7.54	7.75	165	17	352	36	315	24	NA	500	0.2	23.49	1700000	Plant availability is 100%
22-Mar-23	15030	15.03	7.31	7.69	160	15	368	32	323	23	NA	400	0.3	24.73	1400000	Plant availability is 100%
23-Mar-23	13510	13.51	7.33	7.73	165	16	364	32	317	22	NA	600	0.2	24.35	1700000	Plant availability is 100%
24-Mar-23	13020	13.02	7.25	7.68	155	15	372	36	321	23	NA	500	0.3	23.22	1400000	Plant availability is 100%
25-Mar-23	12910	12.91	7.24	7.65	145	14	376	40	325	24	NA	700	0.2	23.15	1700000	Plant availability is 100%
26-Mar-23	13320	13.32	7.31	7.75	140	16	360	36	317	19	NA	600	0.3	24.13	1400000	Plant availability is 100%
27-Mar-23	13710	13.71	7.36	7.67	165	15	372	32	328	22	NA	400	0.2	24.02	1300000	Plant availability is 100%
28-Mar-23	12570	12.57	7.33	7.65	155	14	364	36	322	21	NA	400	0.3	23.86	1700000	Plant availability is 100%
29-Mar-23	12790	12.79	7.35	7.72	160	15	368	32	326	24	NA	700	0.2	23.07	1700000	Plant availability is 100%
30-Mar-23	13180	13.18	7.34	7.75	165	16	368	40	325	25	NA	600	0.3	22.4	1400000	Plant availability is 100%
31-Mar-23	12590	12.59	7.36	7.76	150	14	372	44	327	27	NA	500	0.2	23.79	1300000	Plant availability is 100%
Average	10439.03	10.44	7.32	7.69	155.65	15.58	362.97	36.90	318.16	23.61	NA	535.48	0.25	24.33	1483870.97	

Source: Logbook of Laboratory at Sewage Treatment Plant.

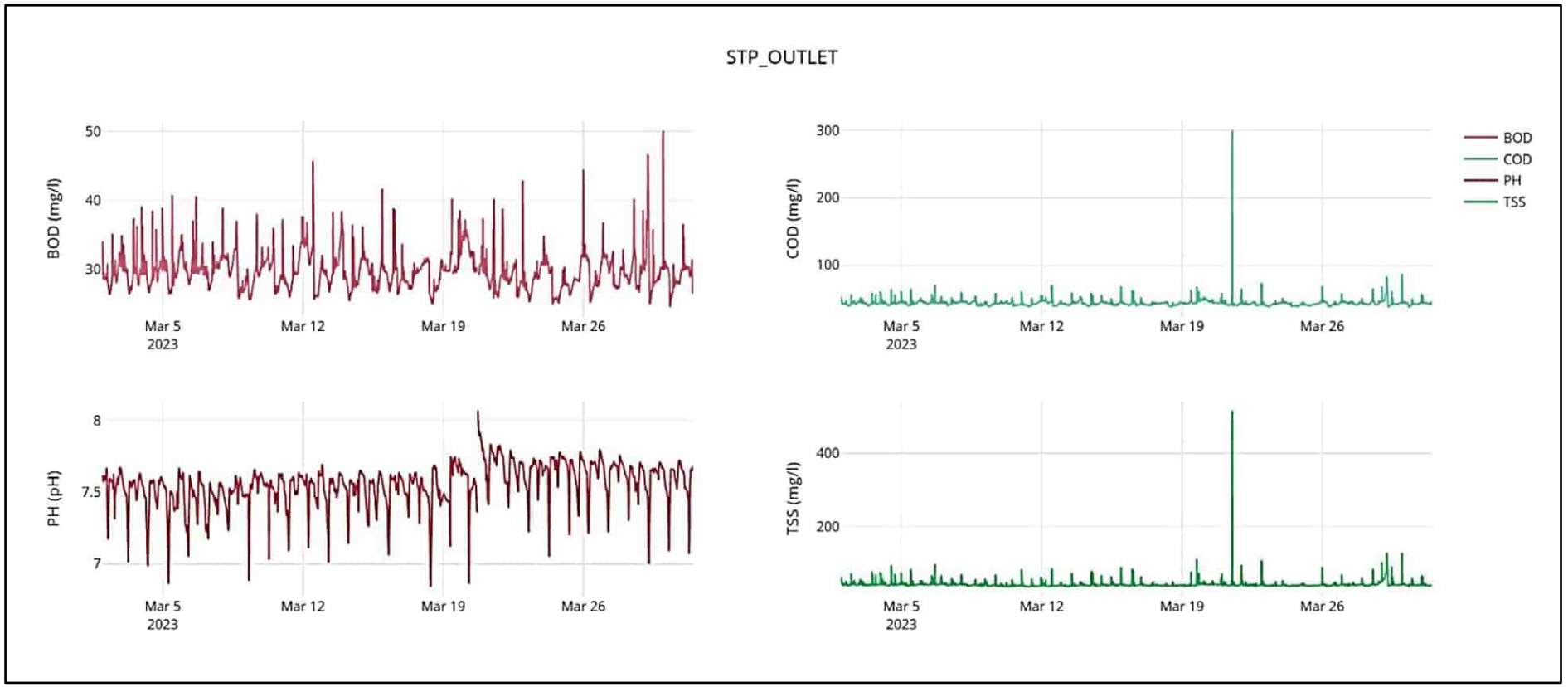
ANNEXURE-II

KPI REPORTS OF PACKAGE -II, ACTION TAKEN REPORT AND RECOMMENDATION

Table of Contents

1. NAINI-I STP AND ASSOCIATE INFRASTRUCTURE

1.1 KPI Report



Source: Online analyzer,

*** BOD in Mg/L, COD in Mg/L and TSS in Mg/L**

Note: 1. Rectification of problem for variation in data is going on as calibration of multi parameter analyzer from OEM is in progress.

Naini-I STP, 80 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design- 80 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design- <9)	Final pH (Design- 6.5 to 8.0)	Inlet BOD (Design- <250 mg/l)	Final BOD (Design - <30 mg/l)	Inlet COD (Design- <500 mg/l)	Final COD (Design - <50 mg/l)	Inlet TSS (Design- <580 mg/l)	FinalTSS (Design - <50 mg/l)	Inlet (Design - NA)	Final (Design <1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Mar-23	133060	113.06	7.45	7.58	125	29	344	43	310	38	NA	400	0.3	24.72	1300000	Plant availability is 100%
2-Mar-23	109950	109.95	7.39	7.50	120	27	352	44	312	39	NA	800	0.2	25.10	1400000	Plant availability is 100%
3-Mar-23	109510	109.51	7.31	7.46	130	29	356	48	315	43	NA	500	0.3	24.50	1700000	Plant availability is 100%
4-Mar-23	110980	110.98	7.30	7.44	145	28	340	44	307	40	NA	700	0.2	24.91	1300000	Plant availability is 100%
5-Mar-23	110420	110.42	7.24	7.42	120	29	329	43	311	38	NA	600	0.3	25.31	1400000	Plant availability is 100%
6-Mar-23	113150	113.15	7.32	7.52	125	28	336	45	304	39	NA	400	0.2	24.17	1700000	Plant availability is 100%
7-Mar-23	114990	114.99	7.25	7.42	135	29	320	42	301	37	NA	800	0.2	25.23	1400000	Plant availability is 100%
8-Mar-23	140250	140.25	7.37	7.52	140	30	308	44	257	38	NA	600	0.3	24.57	1200000	Plant availability is 100%
9-Mar-23	139390	139.39	7.28	7.58	130	28	316	40	299	36	NA	500	0.3	24.20	1700000	Plant availability is 100%
10-Mar-23	122440	122.44	7.31	7.50	125	30	312	42	287	35	NA	700	0.2	25.03	1400000	Plant availability is 100%
11-Mar-23	116020	116.02	7.30	7.48	130	29	318	40	301	34	NA	400	0.2	24.61	1300000	Plant availability is 100%
12-Mar-23	11413	114.13	7.24	7.55	120	30	336	44	298	38	NA	600	0.3	24.64	1400000	Plant availability is 100%
13-Mar-23	116720	116.72	7.33	7.47	125	29	330	42	291	36	NA	800	0.3	25.12	1700000	Plant availability is 100%
14-Mar-23	116690	116.69	7.44	7.53	130	27	324	44	307	36	NA	600	0.2	25.70	1300000	Plant availability is 100%
15-Mar-23	114390	114.39	7.40	7.56	145	28	316	44	288	39	NA	400	0.2	25.10	1700000	Plant availability is 100%
16-Mar-23	114390	114.39	7.30	7.50	120	27	320	45	293	40	NA	700	0.3	25.20	1400000	Plant availability is 100%
17-Mar-23	94630	94.63	7.18	7.58	125	28	329	42	301	37	NA	500	0.3	24.51	1200000	Plant availability is 100%
18-Mar-23	57100	57.1	7.14	7.43	145	27	356	43	289	36	NA	800	0.2	24.16	1700000	Plant availability is 100%
19-Mar-23	74670	74.67	7.25	7.62	150	29	350	42	293	35	NA	600	0.3	25.11	1300000	Plant availability is 100%
20-Mar-23	120740	120.74	7.18	7.60	130	30	342	44	284	38	NA	400	0.2	24.50	1400000	Plant availability is 100%
21-Mar-23	119170	119.17	7.37	7.63	120	28	334	45	281	40	NA	700	0.3	24.73	1700000	Plant availability is 100%
22-Mar-23	123910	123.91	7.30	7.59	125	27	326	44	298	39	NA	500	0.2	25.13	1200000	Plant availability is 100%
23-Mar-23	117640	115.64	7.42	7.61	130	28	322	41	287	36	NA	800	0.2	24.33	1400000	Plant availability is 100%
24-Mar-23	93250	93.25	7.44	7.59	140	26	342	40	300	35	NA	600	0.3	25.06	1700000	Plant availability is 100%
25-Mar-23	97220	97.22	7.11	6.92	125	25	314	39	291	34	NA	400	0.3	25.21	1200000	Plant availability is 100%
26-Mar-23	116720	116.72	7.49	7.58	140	30	345	45	288	41	NA	500	0.2	24.30	1300000	Plant availability is 100%
27-Mar-23	121890	121.89	7.30	7.56	150	28	354	42	302	38	NA	700	0.2	24.86	1400000	Plant availability is 100%
28-Mar-23	122360	122.36	7.33	7.59	130	27	338	44	299	39	NA	600	0.3	25.18	1700000	Plant availability is 100%
29-Mar-23	115150	115.15	7.48	7.51	125	28	342	47	295	43	NA	500	0.3	24.27	1200000	Plant availability is 100%
30-Mar-23	113600	113.60	7.37	7.54	135	27	346	44	302	40	NA	800	0.2	25.00	1400000	Plant availability is 100%
31-Mar-23	117620	117.62	7.33	7.58	145	28	352	42	305	38	NA	400	0.3	25.10	1700000	Plant availability is 100%
Average	**109659.13**	**112.26**	**7.32**	**7.51**	**131.61**	**28.16**	**333.77**	**43.16**	**297.94**	**37.90**	**NA**	**590.32**	**0.25**	**24.82**	**1445161.29**	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken report

Month of Site Inspection	March 2023
Site Inspectors	1. Mr. Surendra Singh Parmar, PM-I, UPJN. 2. Mr. Tauseef, AE, UPJN. 3. Mr. Satwant, JE, UPJN. 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Kumar Tomar, AECOM. 6. Mr. Rahul Azaad, PWPL. 7. Mr. Rahul Choudhary PWPL.
Place(s) of Inspection	• 80 MLD STP at Naini-i, Prayagraj • 80 MLD MPS at Gaughat, Prayagraj • 35 MLD SPS at Chacharnalla, Prayagraj

Visit was done on 27th Feb 2023, 3rd March 2023, 13th March 2023, 18th March 2023 and following observations were made after action taken by Concessionaire on Feb.23month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Naini-I STP	109.51 to 140.25
2	Gaughat MPS	110.93 to 141.72
3	Chacharnalla SPS	36.06 to 50.81

Note: 1) Source for above data is Site record for flow of STP/MPS/SPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 30 mg/l	27 to 30 mg/l
2	TSS – Effluent	< 50 mg/l	34 to 43 mg/l
3	pH – Effluent	6.5 – 9.0	7.42 to 7.58
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 800 MPN/100 ml
5	Consistency – Sludge	> 20 %	24.17 to 25.70 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1200000 to 1700000 MPN/gTS

Note: 1) Source for above data is Site record for Laboratory of STP maintain by Concession.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Naini I STP	41.23 to 58.18
2	Naini I Associated Infrastructure	59.85 to 75.70

Note: 1) Source for above data is site record for Power Consumption of STP.

- **Status of various units & records at site after action taken by Concessionaire on Feb.23month recommendation given by Project Engineer.**

1. Latest SCADA reports regarding KPIs for all STPs were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized as the values are recorded at an interval of 1 hour.
2. Variation can be seen in between recorded values of KPIs in laboratory and recorded values of KPIs in SCADA reports of inlet analyzers which are more than the prescribed limit given in 'Guidelines for Online Continuous Effluent Monitoring Systems (OCEMS)' by Central Pollution Control Board. For the rectifications of the problem, Concessionaire have informed that they are in process of replacing the current online analyzers at inlet with new ones. This is a long-term pending issue hence Concessionaire is required to do the needful at the earliest as per commitment given by them.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. For associated infrastructure of Naini-I STP, reports are being generated for both Chacharnalla SPS and Gaughat MPS except for one out of two streams in Gaughat MPS due to problem in flowmeter of one stream. Currently, flow reports of Chacharnalla SPS are not accurate and flow reports of Gaughat MPS are incomplete. Concessionaire is required to rectify the problem and submit the reports along with Monthly Progress Reports every month.

   Furthermore, there is problem in receiving signals at PLC/SCADA control system from some equipment/instruments and it is also not possible to control some of the equipment (mainly mechanical screens) from PLC/SCADA control system. Also, mechanical screens have provisions in PLC system for being remotely operated and differential level sensors were also installed for the same. Therefore, the system is available, but it is not working due to lack of wiring, etc., hence provision must be made for operating mechanical screens through SCADA which in turn can be operated manually or remotely as per requirement.
5. Flowmeters at inlet of STP is working.
6. Outlet flowmeter is not working. This is a long-term pending issue hence Concessionaire to please rectify the problem at the earliest. Also, RCC chamber for the flowmeter is not constructed.
7. SCADA reports regarding flow for Naini-I facilities were checked and it was found that flow records generated from SCADA for both inlet flowmeters of Naini-I STP are matching with manual site records but not matching for outlet flowmeter of Naini-I STP.
8. In Naini-I STP, main MCC panel doesn't have provision for taking power from secondary sources like DG, Solar power generation system and Biogas power generation system simultaneously. Also, it is observed that Biogas engine is operated in daytime due to which power generated from solar system is wasted during daytime. Therefore, it is suggested to operate Biogas engine in nighttime so that solar power generation system can be operated at full efficiency and full power generated from the same can be used to run equipment.

It is true that Guaranteed Power Consumption of the facility is within limit as per CA but since increase in operation of gas engine will increase the power generation from renewable resources and decrease the power requirement from grid resulting in lowering of electricity bill of the facility which is borne by UPJN.

9. Gas engine is working. Currently, Biogas engine is operated for 9 hours only during the day but as per clause no. 1.1. of Part-G in Schedule-10, the facilities shall run 24 hours every day. Hence, Concessionaire is requested to do the needful as the biogas generated from digesters is wasted by flaring due to improper operation of gas engine.
   Also, reply for Concessionaire's letter PWPL/UPJN/PRAYAGRAJ/O&M/352 dated 5th Feb 2022 is given vide our letter no. AIPL/NMCG/PRAYAG/1367 dated 04th March 2022 for which their response is awaited.
10. All three mechanical screens of 60 MLD part are working. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
11. In mechanical screens of 60 MLD, rectification of problem for misplaced bars for Mechanical screen no. 2 must be rectified at the earliest as garbage is passing and getting deposited in later stages of the STP. Concessionaire is required to rectify the problem and provide a permanent solution.
12. All two mechanical screens of 20 MLD part are working. Cleaning brush is not working properly replacement of brush is required. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
13. For 60 MLD, all grit removal units are working.
14. For 20 MLD, all grit removal units are working.
15. Sludge accumulation in all Primary Settling Tanks, Thickeners has found to be increased beyond normal during latest visit which was due to improper sludge withdrawal from the said structures Concessionaire is required to increase sludge withdrawal time, sludge feeding time of Digester and expedite the work of cleaning sludge drying beds for maintaining proper withdrawal of sludge from said structures. Currently, only two sludge drying beds are empty at STP.
16. All Primary Settling Tanks are working. Scum removal is done manually but it is not efficient as good amount of scum can be seen floating on the surface. Since, Scum removing arrangement is installed, modification are required for the same so that scum collection and removal can be done automatically.
17. For PST 1, 2 & 3, maintenance of telescopic valves must be completed for ensuring proper sludge withdrawal.
18. Installation of actuators is pending for drain valves of Primary Settling Tanks. Concessionaire has told that installation of actuators is not feasible in existing valve arrangement. Existing drain valves were replaced during rehab period and at the same time actuators were also purchased for installation, if these two were not matching then the problem must have been resolved during rehab period itself but since the same is not being done, Concessionaire is required to do necessary modification/replacement work done so that installation work can be completed.
19. In Aeration Unit of 60 MLD 8 surface aerators out of 9 are in working condition. It is recommended to install DO analyzer in this tank also for better monitoring.
20. Aeration tank of 20 MLD is in operation. Air distribution is proper in the tank . Commissioning of DO analyzer is not completed yet.
21. All Aeration blowers are working.
22. All Final Settling Tanks are working.

23. It is suggested to install torque switches in all clarifiers for having better protection against excessive load on scrapper.
24. Installation of actuators is pending for drain valves of Final Settling Tanks. Concessionaire has told that installation of actuators is not feasible in existing valve arrangement. Existing drain valves were replaced during rehab period and at the same time actuators were also purchased for installation, if these two were not matching then the problem must have been resolved during rehab period itself but since the same is not being done, Concessionaire is required to do necessary modification/replacement work done so that installation work can be completed.
25. In RSPH unit of 60 MLD, 3 out of 4 pumps are working, two pumps are under maintenance. Hence, no pump is in stand-by. This is a long-term pending issue and hence rectification of the problem must be done at the earliest.
26. In RSPH unit of 20 MLD, both Pumps are working.
27. Both chlorinators are in working condition. Both booster pumps are working. One out of two vacuum injectors are not in working condition and hence none is in stand-by. During the visit, it was found that filled chlorine cylinders are kept in unproper way which can be very risky.
28. Commissioning of Leak absorption system is completed. Checklist forthe same must be prepared and recorded properly every month.
29. Installation of new chlorine analyzer at outlet is completed but its calibration work is pending.
30. Both thickeners are in working condition. Installation of actuators for drain valves is pending.
31. All thickened sludge transfer pumps are working.
32. In TEPH, all pumps are OK for operation for Dandi and Naini Area.
33. For TEPH panel, modification of room is completed but panel erection is not started yet for fulfilling electrical norms.
34. Both DGs are in operation. Installation work of chimney for DGs as per CPCB norms is pending.
35. Sludge dewatering unit is in operation. Installation of various instruments like flowmeter (in poly dosing line), pressure gauge, etc., as per approved drawing are pending.
36. All filtrate pumps are working.
37. There is variation in recorded values of flow from inlet flowmeter at Naini-I STP and outlet flowmeters of Gaughat MPS, please rectify the problem.
38. Both dewatering feed pumps are under maintenance. Currently, submersible pump is being used for transferring sludge from digesters to dewatering building.
39. For sludge drying beds, it is required to check filter media and gravels as water is not percolating from SDBs.
40. All Digesters are working.
41. Heat exchangers, sludge recirculation pumps for all digesters are working.
42. In compressor room, one compressor is working and one is in maintenance in each skid.
43. Both Gas holders are working.
44. Gas flare is working.
45. H2S scrubber unit is working. Analyzers fitted at inlet & outlet unit are working.
46. Installation of service water pumps is pending. It is observed that ground water is being used as service water in whole STP which is a violation of environmental norms. Hence, to stop this installation of service water pumps and laying of required pipeline must be completed at the earliest.
47. Rehabilitation works for storm water pump house are pending. Discussions regarding the

feasibility of same has already been done during rehab period and hence the work must be done accordingly.

48. As already decided, repairing/construction of retaining wall is not completed yet. In 2022 also, river water has come inside the STP during flood and various equipment in different units of STP are required to be dismantled and hence when river water has gone down, restarting of STP took 5-6 days which could have been avoided if retaining wall of the STP was repaired/constructed correctly.
49. Rehabilitation works for tube well unit are pending.
50. Landscaping work of the plant must be improved.
51. Construction of storm water drains is in progress.
52. As per Clause No.1.6 & 1.7.1 of Part – G in concession agreement, data from Computer Maintenance Management system (CMMS) must be provided in MPR as supporting documents for maintenance data. Currently, CMMS system is installed at Naini-I STP is installed but not working as per requirements of day-to-day maintenance activities. Concessionaire is required to the needful at the earliest.
53. As already discussed, painting of all units from inside and outside is not completed yet. Concessionaire to please do the needful.
54. CCTV camera at the outlet point of STP is not working.
55. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement or it must be properly stacked at one place after taking proper consent from UPJN. Concessionaire have told that this is out of their jurisdiction for which Concessionaire is required to go through the mentioned clause and plan for the same accordingly.
56. For Gaughat MPS, following observations were made during visit:

    a) Replacement of NRV in header line of HNC pumps in Gaughat MPS is required for reducing the effect of water hammering on the pumps. Concessionaire to please do the needful.
    b) 3 HNC pumps are working. One pump is not working due to problem of capacitor fuse.
    c) Two submersible pumps are in working condition and one is under maintenance.
    d) Both mechanical screens of HNC pumps are working. Currently sensor of one screen which provides overload protection is broken, it must be replaced at the earliest as excessive wear and tear can be caused in screen due to overload.
    Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
    e) Both mechanical screens for submersible pumps are working.
    Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
    f) DG set of 1000 KVA and DG sets of submersible pumps are working. Repairing work of 11 KV DG synchronization panel is pending. Repairing work of 500 KVA/11KV DG set is pending. Concessionaire to please complete all pending works.
    g) It is suggested to install manual screen in receiving chamber of SPS for reducing load on mechanical screens.
    h) In PLC panels, indication for ON/OFF of mechanical screens, belt/screw conveyor is not coming.

57. For Chacharnalla SPS, following observations were made during visit:

a) Currently all VNC pumps are working. Leakage rectification is required from header line near small VNC pumps.
b) One out of two mechanical screens are working. One mechanical screen and belt conveyor are under maintenance.
c) Both DG sets are OK for operation.
d) Old DG set is working.
e) Installation of pressure transmitter on header line of VNC pumps is pending.
f) In PLC panels, indication for ON/OFF of mechanical screens, belt conveyor is not coming.
g) Power factor maintained in this facility is 0.78 which is very low and must be maintained around 0.99, rectification of this problem is required.

58. Since COD is announced for all Package – II facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

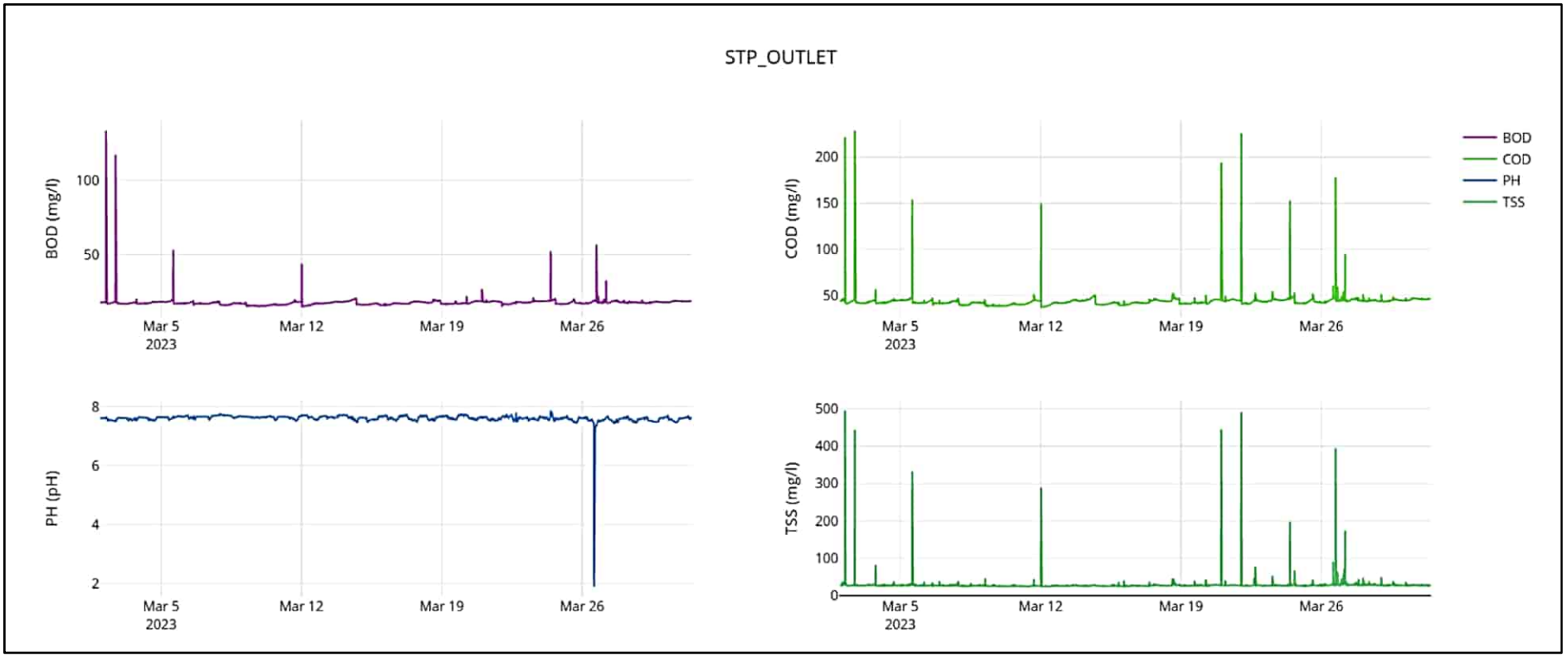
a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
b) Calibration for field instruments like multiparameter analyzer at inlet, outlet flowmeter, DO analyzers, level transmitter is not carried out yet. Calibration for lab instruments is completed but reports are not submitted yet. It is again reiterated that as per clause no. 9.8 (a)(viii) of Concession Agreement, "*The meters/devices shall be calibrated at the start of the relevant O&M Period and then at the start of each subsequent year during the relevant O&M Period in accordance with Good Industry Practices and the meters/devices shall be jointly tested by the Jal Nigam and the Concessionaire to ensure the accuracy of the meters installed by the Concessionaire".* Hence, Concessionaire is required to do the needful and submit reports timely at the start of each subsequent year of O&M.
c) Testing of TN, NH4-N, TP for composite samples of influent must be performed each day as per Part-G in Schedule-10 of CA.
d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
e) Quarterly report as per Part-G in Schedule-10 of CA.
f) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
g) Procedure for recording & disposal of complaints.
h) Safety & Health Records. Incident reports must also be submitted along with action plan.
i) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
j) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

1.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of PSTs also for checking the efficiency of PSTs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- All the old material obtained due to rehabilitation works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

2. RAJAPUR STP AND ASSOCIATE INFRASTRUCTURE

2.1 KPI Report



Source: Online analyzer,

*** BOD in Mg/L, COD in Mg/L and TSS in Mg/L**

Note: 1. Rectification of problem for variation in data is going on as calibration of multi parameter analyzer from OEM is in progress.

2.In the blank areas, data was not transfer due to some issue in router and flood.

Rajapur STP, 60 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design-60 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design-<9)	Final pH (Design-6.5 to 9.0)	Inlet BOD (Design-<250 mg/l)	Final BOD (Design -<30 mg/l)	Inlet COD (Design-<500 mg/l)	Final COD (Design -<50 mg/l)	Inlet TSS (Design-<500 mg/l)	FinalTSS (Design <50 mg/l)	Inlet (Design - NA)	Final (Design - <1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Mar-23	73480	73.48	7.28	7.58	130	17	328	40	291	27	NA	500	0.2	23.15	1700000	Plant availability is 100%
2-Mar-23	71870	71.87	7.26	7.60	135	18	324	44	289	28	NA	600	0.3	25.04	1400000	Plant availability is 100%
3-Mar-23	72680	72.68	7.3	7.62	125	16	332	40	305	26	NA	700	0.3	22.39	1700000	Plant availability is 100%
4-Mar-23	69690	69.69	7.28	7.61	130	18	316	44	285	25	NA	600	0.2	23.79	1300000	Plant availability is 100%
5-Mar-23	74150	74.15	7.31	7.66	128	18	324	40	297	27	NA	700	0.3	23.75	1400000	Plant availability is 100%
6-Mar-23	72080	72.08	7.29	7.67	135	17	320	44	287	26	NA	500	0.2	24.13	1700000	Plant availability is 100%
7-Mar-23	71940	71.94	7.33	7.68	130	18	328	40	307	25	NA	400	0.2	23.61	1400000	Plant availability is 100%
8-Mar-23	76720	76.72	7.31	7.67	125	16	312	44	279	27	NA	600	0.3	25.53	1400000	Plant availability is 100%
9-Mar-23	76220	76.22	7.26	7.60	130	17	324	40	287	26	NA	400	0.3	24.82	1300000	Plant availability is 100%
10-Mar-23	73810	73.81	7.31	7.53	135	16	320	36	286	27	NA	700	0.3	26.78	1400000	Plant availability is 100%
11-Mar-23	70110	70.1	7.28	7.64	140	17	328	44	295	25	NA	600	0.2	23.63	1700000	Plant availability is 100%
12-Mar-23	72400	72.4	7.32	7.66	125	16	316	36	307	26	NA	500	0.3	24.69	1400000	Plant availability is 100%
13-Mar-23	73700	73.7	7.27	7.65	140	18	324	40	289	25	NA	700	0.2	23.78	1700000	Plant availability is 100%
14-Mar-23	71700	71.7	7.29	7.66	145	19	336	44	278	27	NA	600	0.3	25.43	1300000	Plant availability is 100%
15-Mar-23	75450	75.45	7.26	7.61	140	18	328	40	292	26	NA	500	0.2	23.5	1400000	Plant availability is 100%
16-Mar-23	73980	73.98	7.28	7.64	135	17	312	44	285	27	NA	400	0.3	23.82	1300000	Plant availability is 100%
17-Mar-23	69250	69.25	7.31	7.63	125	16	324	40	297	26	NA	600	0.2	24.33	1700000	Plant availability is 100%
18-Mar-23	59740	59.74	7.24	7.54	130	17	312	44	288	27	NA	500	0.3	25.65	1400000	Plant availability is 100%
19-Mar-23	62830	62.83	7.32	7.67	125	16	336	40	278	25	NA	400	0.2	23.35	1300000	Plant availability is 100%
20-Mar-23	78900	78.9	7.44	7.64	130	17	308	44	290	26	NA	700	0.2	24.58	1700000	Plant availability is 100%
21-Mar-23	70560	70.56	7.33	7.60	140	18	320	44	285	26	NA	600	0.3	25.21	1400000	Plant availability is 100%
22-Mar-23	72690	72.69	7.29	7.65	135	17	312	40	278	27	NA	500	0.2	23.78	1700000	Plant availability is 100%
23-Mar-23	69010	69.01	7.34	7.61	140	18	324	44	291	26	NA	400	0.3	23.63	1300000	Plant availability is 100%
24-Mar-23	70340	70.34	7.32	7.63	125	17	332	48	286	27	NA	700	0.2	23.34	1400000	Plant availability is 100%
25-Mar-23	74640	74.64	7.33	7.59	145	18	324	40	285	25	NA	600	0.3	24.51	1700000	Plant availability is 100%
26-Mar-23	74130	74.13	7.23	7.54	140	16	316	44	296	28	NA	500	0.3	23.74	1300000	Plant availability is 100%
27-Mar-23	76570	76.57	7.31	7.57	135	17	328	48	305	29	NA	700	0.2	24.59	1400000	Plant availability is 100%
28-Mar-23	69280	69.28	7.29	7.58	125	18	324	44	288	27	NA	600	0.3	22.65	1300000	Plant availability is 100%
29-Mar-23	72830	72.83	7.26	7.57	140	16	332	48	293	26	NA	400	0.2	23.76	1700000	Plant availability is 100%
30-Mar-23	70610	70.61	7.25	7.56	135	19	336	44	290	25	NA	500	0.3	23.61	1400000	Plant availability is 100%
31-Mar-23	71690	71.69	7.25	7.65	130	17	328	40	295	27	NA	400	0.2	24.37	1300000	Plant availability is 100%
Average	**72033.87**	**72.03**	**7.29**	**7.62**	**133.16**	**17.15**	**323.48**	**42.32**	**290.13**	**26.35**	**NA**	**551.61**	**0.25**	**24.17**	**1467741.94**	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken report

Month of Site Inspection	March 2023
Site Inspectors	1. Mr. Surendra Singh Parmar, PM-I, UPJN. 2. Mr. Tauseef, AE, UPJN. 3. Mr. Manish Srivastava, JE, UPJN 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Kumar Tomar, AECOM. 6. Mr. Rahul Azaad, PWPL. 7. Mr. Girijesh, PWPL. 8. Mr. Saurabh, PWPL
Place(s) of Inspection	• 60 MLD STP at Rajapur, Prayagraj • 25 MLD SPS at Rajapur, Prayagraj • 55 MLD MPS at Mumfodganj Prayagraj

Visit was done on 25th Feb 2023, 2nd March 2023, 10th March 2023 16th March 2023, and following observations were made after action taken by Concessionaire on Feb.23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Rajapur STP	69.69 to 76.72
2	Rajapur SPS	5.64 to 8.31
3	Mumfodganj MPS	62. 21 to 70.32

Note: 1) Source for above data is Register for flow record of STP & MPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	16 to 18 mg/l
2	TSS – Effluent	< 30 mg/l	25 to 28 mg/l
3	pH – Effluent	6.5 – 9.0	6.67 to 7.68
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.39 to 26.78 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1300000 to 1700000 MPN/gTS

Note: 1) Source for above data is Register for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Rajapur STP	13.20 to 35.92
2	Rajapur Associated Infrastructure	52.48 to 59.50

Note: 1) Source for above data is Register for Power Consumption Record of STP.

- **Status of various units & records at site after action taken by Concessionaire on Feb.23 month recommendation given by Project Engineer.**

1. Latest SCADA reports regarding KPIs for all STPs were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized as the values are recorded at an interval of 1 hour.
2. Variation can be seen in between recorded values of KPIs in laboratory and recorded values of KPIs in SCADA reports of inlet analyzers which are more than the prescribed limit given in 'Guidelines for Online Continuous Effluent Monitoring Systems (OCEMS)' by Central Pollution Control Board. For the rectifications of the problem, Concessionaire have informed that they are in process of replacing the current online analyzers at inlet with new ones. This is a long-term pending issue hence Concessionaire is required to do the needful at the earliest as per commitment given by them.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Communication of data from PLC system of Mumfordganj SPS has started coming to SCADA system of STP. Concessionaire is required to submit SCADA reports along with MPRs of this facility once correct SCADA reports start generating.

   Furthermore, there is problem in receiving signals at PLC/SCADA control system from some equipment/instruments and it is also not possible to control some of the equipment (mainly mechanical screens) from PLC/SCADA control system. Also, mechanical screens have provisions in PLC system for being remotely operated and differential level sensors were also installed for the same. Therefore, the system is available, but it is not working due to lack of wiring, etc., hence provision must be made for operating mechanical screens through SCADA which in turn can be operated manually or remotely as per requirement. Communication of data from PLC system of Mamfordganj SPS was not received since 10th December. Concessionaire is required to look into the matter & do the needful at the earliest.
5. Flowmeters at inlet of STP is working.
6. Flowmeter at outlet is working.
7. Both Grit removal units are working.
8. SCADA reports regarding flow for Rajapur STP was checked and it was found that flow records generated from SCADA are not matching for flowmeter of Mumfordganj SPS at Rajapur STP and outlet flowmeter of Rajapur STP. Concessionaire is required to do the needful.
9. Both Mechanical Fine screens at PTU are working. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
10. Both UASBs were working satisfactorily. Cleaning of launders and scum from top must be done regularly. Also, several distribution cells were found in choked condition, cleaning for the same must be done on regular basis for avoiding such kind of situations. If it is required to increase the manpower, then same must be done at the earliest.

11. It is suggested to clean the UASB reactors for removing dead sludge from the reactors which in turn will increase the efficiency of UASBs. Hence, Concessionaire is suggested to plan for the same. Cleaning of launders and scum from top must be done regularly.
12. It is observed that problem of leakage from HDP inlet pipes is very frequent. For minimizing this problem, it was suggested to give proper supports under the pipes. Concessionaire to please do the needful.
13. 13 surface aerators were found running, all 15 surface aerators are in working condition. It is recommended to install DO analyzer in this tank also for better monitoring.
14. It is also suggested to clean the Aeration tank for removing dead sludge which in turn will increase the efficiency of Aeration.
15. For Quiescent zone, it is suggested to plan for cleaning of the same for removing dead sludge which in turn will increase the efficiency of Quiescent zone. Currently, lot of dead sludge deposited in quiescent zone is coming along with effluent which is deteriorating the quality of effluent.
16. Both DG sets are working. It is suggested to increase the height of chimney of DG sets as per CPCB norms.
17. All sludge transfer pumps are in working condition.
18. Sludge dewatering unit is working.
19. For chlorination system, temporary arrangement is provided for using effluent water at the inlet of booster pumps. Concessionaire is suggested to make this arrangement permanent.
20. Installation of new chlorine analyzer at outlet is pending.
21. At flood pumping station, one pump is under maintenance. Problem for the same must be rectified at the earliest.
22. It is continuously observed that dewatered sludge is being dumped inside the plant. Concessionaire is required to dump the dewatered sludge in the place given by UPJN.
23. Calibration of flowmeter in outlet line of effluent pumps is Completed.
24. In SCADA system, flow variation can be seen in recorded values of daily and monthly flow as per site records. Also, there is variation in between flow recorded in SCADA reports and flow recorded in logbooks. This problem must be rectified.
25. There is variation in recorded values of flow from inlet flowmeter at Rajapur STP and outlet flowmeter of Mumfordganj SPS, please rectify the problem.
26. There is variation in recorded values of flow from inlet flowmeters at Rajapur STP and outlet flowmeter of Rajapur STP, please rectify the problem.
27. Gas holder and gas flare are not in operation. It is part of STP facility hence must be made operational. Also, amount of Gas generation also indicates the performance level of UASBs. Concessionaire is requested to complete the maintenance works and take both into operation as follow-up for the same is being done since rehab period.
28. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement or it must be properly stacked at one place after taking proper consent from UPJN. Concessionaire have told that this is out of their jurisdiction for which Concessionaire is required to go through the mentioned clause and plan for the same accordingly.
29. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not started yet, Concessionaire to please do the needful.
30. At Rajapur SPS following observations were made:

a) Temporary Bund at tapping Point is damaged due to the rain. It is not repaired yet. Most of the Raw Sewage from nearby nalla is going directly into the Ganga River. Concessionaire is suggested to rectify on urgent basis.
b) Nalla tapping of Rajapur SPS is closed at 5:16 PM on 07.01.2023 for taking more sewage from household network as per instructions given by UPJN.
c) Mechanical coarse Screens at SPS is working. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
d) Operation of mechanical screen at SPS cannot be done from SCADA.
e) All submersible pumps are in working condition. Pressure transmitter is not installed in common header line of pumps yet. Also, pumps must be kept in auto mode so that pump can start & stop on the basis of level in the sump.

31. At Mumfodganj MPS following observations were made:

a) At tapping point of SPS, manual screen is broken from bottom side, maintenance for the same is required as lot of waste is going inside SPS which can in turn will choke the pumps.
b) Civil maintenance is required for the floor below bypass gate at tapping point for stopping the leakage from bypass gate.
c) Both Mechanical coarse screens at MPS are working. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
d) At Mumfodganj MPS, 4 pumps are OK for operation out of 6 Pumps. Pressure transmitter is not installed in common header line of pumps yet. Also, pumps must be kept in auto mode so that pump can start & stop on the basis of level in the sump.
e) Dismantling joint must be provided along with flowmeter for ease in maintenance.
f) NRV must be provided in common header to reduce the effect of water hammering.
g) Site house Keeping & landscaping must be improved. Concessionaire is suggested to keep the Old material Properly.

32. Since COD is announced for all Package – II facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
b) Calibration for field instruments like multiparameter analyzer at inlet, outlet flowmeter, DO analyzers, level transmitter is not carried out yet. Calibration for lab instruments is completed but reports are not submitted yet. It is again reiterated that as per clause no. 9.8 (a)(viii) of Concession Agreement, "*The meters/devices shall be calibrated at the start of the relevant O&M Period and then at the start of each subsequent year during the relevant O&M Period in accordance with Good Industry Practices and the meters/devices shall be jointly tested by the Jal Nigam and the Concessionaire to ensure the accuracy of the meters installed by the Concessionaire".* Hence,

Concessionaire is required to do the needful and submit reports timely at the start of each subsequent year of O&M.

c) Testing of TN, NH4-N, TP for composite samples of influent must be performed each day as per Part-G in Schedule-10 of CA.
d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
e) Quarterly report as per Part-G in Schedule-10 of CA.
f) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
g) Procedure for recording & disposal of complaints.
h) Safety & Health Records. Incident reports must also be submitted along with action plan.
i) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
j) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

2.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of UASBs also for checking the efficiency of UASBs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- All the old material obtained due to rehabilitation works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

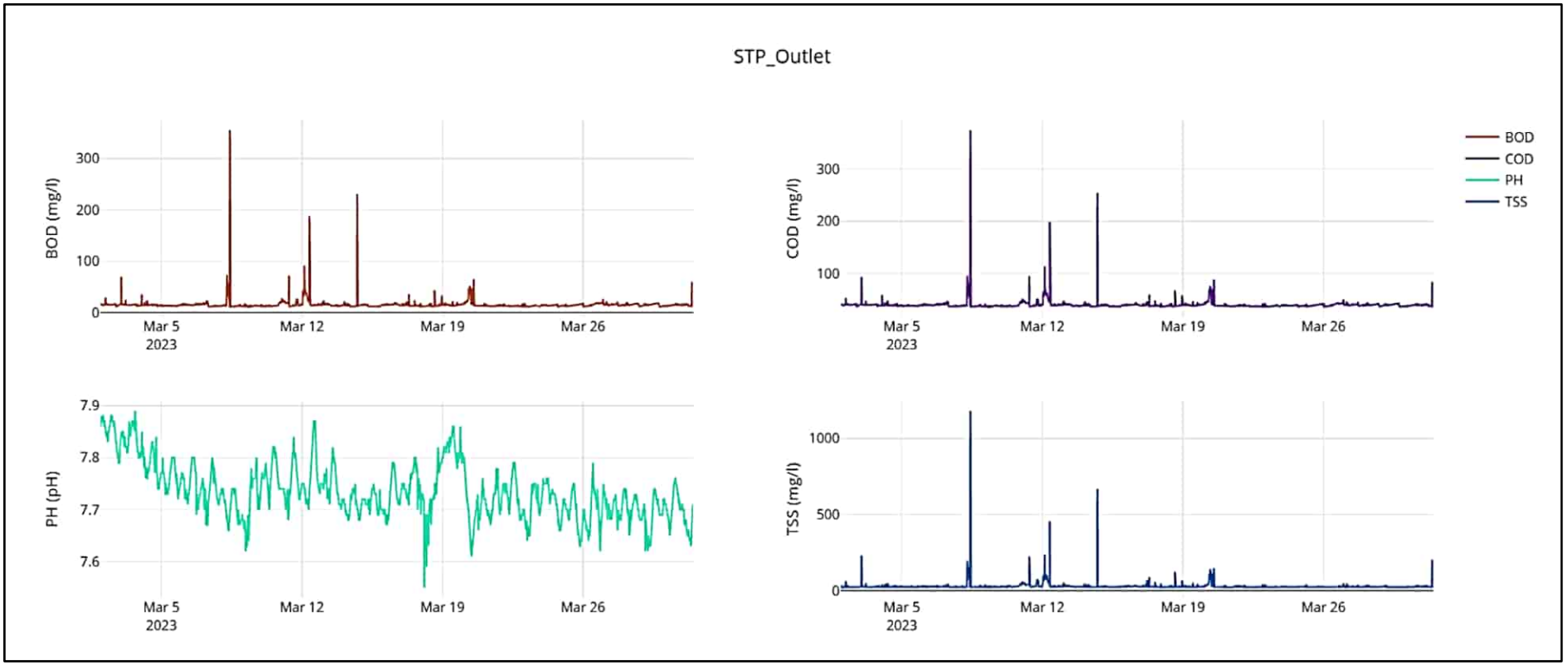
ANNEXURE-III

KPI REPORTS OF PACKAGE -III, ACTION TAKEN REPORT AND RECOMMENDATION

Table of Contents

1. NUMAYADAHI STP AND ASSOCIATE INFRASTRUCTURE

1.1 KPI Report



Source: Online analyzer,

*** BOD in Mg/L, COD in Mg/L and TSS in Mg/L**

Note: 1. Rectification of problem for variation in data is going on as calibration of multi parameter analyzer from OEM is in progress.

2. In the blank areas, data was not transfer due to some issue in router.

Numayadahi STP, 50 MLD STP at Prayagra
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design- 50 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design- <9)	Final pH (Design- 6.5 to 8.0)	Inlet BOD (Design- <250 mg/l)	Final BOD (Design - <20 mg/l)	Inlet COD (Design- <500 mg/l)	Final COD (Design- <50 mg/l)	Inlet TSS (Design- <500 mg/l)	Final TSS (Design - <30 mg/l)	Inlet (Design - NA)	Final (Design - <1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Mar-23	60920	60.92	7.28	7.72	135	17	312	36	288	23	NA	400	0.3	23.5	1300000	Plant availability is 100%
2-Mar-23	62480	62.48	7.24	7.76	150	16	324	40	294	24	NA	600	0.2	24.47	1400000	Plant availability is 100%
3-Mar-23	62510	62.51	7.27	7.74	140	14	328	36	276	22	NA	700	0.2	23.78	1700000	Plant availability is 100%
4-Mar-23	58610	58.61	7.21	7.69	150	15	320	40	292	25	NA	500	0.3	23.69	1400000	Plant availability is 100%
5-Mar-23	59110	59.11	7.28	7.74	140	15	336	40	288	21	NA	400	0.3	23.5	1700000	Plant availability is 100%
6-Mar-23	59180	59.18	7.22	7.71	145	18	320	44	298	26	NA	600	0.3	24.82	1300000	Plant availability is 100%
7-Mar-23	59500	59.5	7.18	7.78	130	17	328	36	284	24	NA	500	0.3	23.78	1400000	Plant availability is 100%
8-Mar-23	61860	61.86	7.21	7.72	145	15	324	40	298	29	NA	700	0.2	24.04	1300000	Plant availability is 100%
9-Mar-23	58650	58.65	7.26	7.71	135	14	312	36	288	25	NA	600	0.3	23.86	1700000	Plant availability is 100%
10-Mar-23	61590	61.59	7.21	7.74	130	15	320	40	296	27	NA	400	0.3	23.22	1300000	Plant availability is 100%
11-Mar-23	61730	61.73	7.28	7.76	145	18	316	44	297	28	NA	700	0.2	24.26	1400000	Plant availability is 100%
12-Mar-23	61820	61.82	7.26	7.71	150	19	324	48	282	26	NA	500	0.3	23.45	1700000	Plant availability is 100%
13-Mar-23	60630	60.63	7.22	7.68	145	17	304	40	297	27	NA	600	0.3	23.69	1300000	Plant availability is 100%
14-Mar-23	62360	62.36	7.26	7.74	135	16	320	44	286	28	NA	400	0.2	24.09	1700000	Plant availability is 100%
15-Mar-23	61400	61.4	7.23	7.71	140	15	328	36	291	25	NA	700	0.3	23.57	1300000	Plant availability is 100%
16-Mar-23	59420	59.42	7.21	7.74	135	17	316	40	298	26	NA	500	0.2	24.04	1400000	Plant availability is 100%
17-Mar-23	48320	48.32	7.27	7.76	145	16	312	36	279	27	NA	400	0.2	23.21	1300000	Plant availability is 100%
18-Mar-23	36510	36.51	7.22	7.69	135	15	308	36	273	24	NA	700	0.2	23.66	1400000	Plant availability is 100%
19-Mar-23	51070	51.07	7.24	7.78	140	17	316	40	281	23	NA	400	0.3	23.5	1400000	Plant availability is 100%
20-Mar-23	54630	54.63	7.21	7.73	150	19	328	44	293	27	NA	600	0.2	24.25	1700000	Plant availability is 100%
21-Mar-23	56420	56.42	7.26	7.75	135	15	312	36	287	25	NA	700	0.3	24.82	1300000	Plant availability is 100%
22-Mar-23	58850	58.85	7.21	7.68	130	14	304	40	292	23	NA	500	0.3	23.64	1400000	Plant availability is 100%
23-Mar-23	58260	58.26	7.25	7.72	140	13	328	36	298	24	NA	600	0.2	23.69	1700000	Plant availability is 100%
24-Mar-23	70370	70.37	7.28	7.74	135	15	316	40	304	23	NA	400	0.3	23.57	1300000	Plant availability is 100%
25-Mar-23	66880	66.88	7.22	7.75	145	16	308	40	298	25	NA	700	0.3	23.78	1400000	Plant availability is 100%
26-Mar-23	55350	55.35	7.25	7.73	145	16	316	36	286	24	NA	500	0.2	24.04	1700000	Plant availability is 100%
27-Mar-23	57440	57.44	7.29	7.74	150	16	324	44	306	27	NA	600	0.3	23.55	1300000	Plant availability is 100%
28-Mar-23	63120	63.12	7.23	7.68	140	15	328	40	291	24	NA	400	0.3	24.98	1700000	Plant availability is 100%
29-Mar-23	58680	58.68	7.26	7.74	150	17	316	36	289	23	NA	700	0.2	23.64	1400000	Plant availability is 100%
30-Mar-23	62520	62.52	7.24	7.76	130	15	312	40	296	25	NA	400	0.3	24.82	1700000	Plant availability is 100%
31-Mar-23	59930	59.93	7.22	7.71	140	17	328	36	292	28	NA	600	0.2	23.5	1400000	Plant availability is 100%
Average	59036.13	59.04	7.24	7.73	140.65	15.94	318.97	39.35	290.90	25.10	NA	548.39	0.26	23.88	1454516.13	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken report

Month of Site Inspection	March 2023
Site Inspectors	1. Mr. Surendra Singh Parmar, PM-I, UPJN. 2. Mr. Abhishek Shrivastava, AE, UPJN. 3. Mr. Rahul Paswan, JE, UPJN 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Kumar Tomar, AECOM. 6. Mr. Rahul Kumar Azaad, PWPL. 7. Mr. Vijay Dwivedi, PWPL. 8. Mr. Jitender, PWPL.
Place(s) of Inspection	• 50 MLD STP at Numayadahi, Prayagraj • 50 MLD MPS at Ghagharnalla, Prayagraj • 15 MLD SPS at Sasur Kadheri, Prayagraj • 16.5 MLD SPS at Lukarganj, Prayagraj

Visit was done on 25th Feb 2023, 3rd March 2023, 10th March 2023 16th March 2023, and following observations were made after action taken by Concessionaire on Feb.23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Numayadahi STP	58.61 to 62.51
2	Ghagharnalla MPS	58.90 to 65.59
3	Sasur Kadheri SPS	26.36 to 36.75
4	Lukerganj SPS	4.30 to 6.06

Note: 1) Source for above data is Site record for flow of STP/MPS/SPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	14 to 18 mg/l
2	TSS – Effluent	< 30 mg/l	21 to 29 mg/l
3	pH – Effluent	6.5 – 9.0	7.68 to 7.78
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.22 to 24.82 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1300000 to 1700000 MPN/gTS

Note: 1) Source for above data is Site record for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Numayadahi STP	64.84 to 72.25
2	Numayadahi Associated Infrastructure	54.05 to 99.51

Note: 1) Source for above data is Site record for Power Consumption of STP.

- **Status of various units & records at site after action taken by Concessionaire on Feb.23 month recommendation given by Project Engineer.**

1. Latest SCADA reports regarding KPIs for all STPs were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized as the values are recorded at an interval of 1 hour.
2. Variation can be seen in between recorded values of KPIs in laboratory and recorded values of KPIs in SCADA reports of inlet analyzers which are more than the prescribed limit given in 'Guidelines for Online Continuous Effluent Monitoring Systems (OCEMS)' by Central Pollution Control Board. For the rectifications of the problem, Concessionaire have informed that they are in process of replacing the current online analyzers at inlet with new ones. This is a long-term pending issue hence Concessionaire is required to do the needful at the earliest as per commitment given by them.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Communication of data from PLC system of Mumfordganj SPS has started coming to SCADA system of STP. Concessionaire is required to submit SCADA reports along with MPRs of this facility once correct SCADA reports start generating.

   Furthermore, there is problem in receiving signals at PLC/SCADA control system from some equipment/instruments and it is also not possible to control some of the equipment (mainly mechanical screens) from PLC/SCADA control system. Also, mechanical screens have provisions in PLC system for being remotely operated and differential level sensors were also installed for the same. Therefore, the system is available, but it is not working due to lack of wiring, etc., hence provision must be made for operating mechanical screens through SCADA which in turn can be operated manually or remotely as per requirement.

5. Flowmeter at inlet of STP is working.
6. Flowmeter at outlet of STP is working. Calibration of flowmeter is completed but it is not giving accurate values as compared to inlet flowmeter. Concessionaire is required to resolve the problem.
7. Both grit removal units are in operation.
8. Both Mechanical Screens are working. Differential level sensors are not synchronized with mechanical screens hence screens cannot run in auto mode. Screen electric panel repairing is required.
9. All Biotowers were in operation. Replacement of net is required for all biotowers.
10. Though overhauling of mechanical screens is completed in rehabilitation period but still considerable amount of plastic waste is reaching the biotowers hence the gap must be checked around mechanical screens or otherwise this plastic waste can choke up the media which will ultimately lower the efficiency of Biotowers.
11. All Aeration tanks are working.
12. All Aeration blowers are in working condition & two blowers were found running.
13. DO analyzer at the outlet of Aeration tank no. 2 is not working properly, please check & rectify the problem.
14. Pressure transmitter & temperature transmitter are not installed yet on header line of

Aeration blowers.

15. All Centrifuges are working along with Sludge Feed pumps and Poly dosing pumps. Sludge generation is 7-8 trolleys per day.
16. All Sludge Recirculation Pumps are in working condition.
17. Both Secondary clarifiers were found in operation.
18. Both booster pumps & both chlorinators are in working condition & chlorine dosing was found to be running at 3 to 4 Kg/hr. Residual chlorine was checked & found to be around 0.2 – 0.3 mg/l.
19. Rehabilitation of Leak absorption system is completed. Testing of system for working in auto modewas checked and it was found that air blower & caustic pump start running at 3 ppm, but it must be set around 1 ppm for providing better safety measures. Concessionaire is requested to do the needful.
20. Current chlorine analyzer for the effluent is not giving correct values. Installation of new chlorine analyzer is pending.
21. Both DGs are working.
22. Minor Seepages from Biotowers & some other units can be seen, and this must be rectified.
23. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not started yet, Concessionaire to pleasedo the needful.
24. Painting of units in the STP is completed from outside. It is suggested to start the painting work for all units from inside also.
25. All CCTV cameras are working. It is suggested to change the position of CCTV camera at outlet so that it can show the free fall area of effluent at CCT.
26. There is variation in recorded values of flow from inlet flowmeter at Numayadahi STP and outlet flowmeter of Ghagharnalla MPS, please rectify the problem.
27. There is variation in recorded values of flow from inlet flowmeter at Numayadahi STP and outlet flowmeter of Numayadahi STP, please rectify the problem.
28. For Ghagharnalla MPS, following issues are required to be resolved:

    a) Currently, it was observed that overflow occurs sometimes during peak time due to deposition of sludge in the path of nalla towards tapping point even after running MPS at full capacity. Hence, UPJN is requested to please look into the matter and do the needful.
    b) Repairing of wall of pump house towards sump is required so that no sewage can go inside the pump house in any situation.
    c) Currently, all HNC pumps (5 new + 1 old) are in working condition.
    d) Earlier during normal days, there was minor leakage of sewage from the retaining wall at the tapping point of MPS, this must be rectified as raw sewage is going directly into the river.
    e) Both Mechanical screens are working.
    f) Both DG sets are working.
    g) During the shutdown taken in the month of May-21, NRV was taken out from the main header line for maintenance purpose but it is not reinstalled till date. Concessionaire to please do the needful so that effect of back hammering on the pumps can be reduced.
    h) Painting for all units in the MPS is not started yet. Concessionaire to please do the needful.

29. For Sasur Kadheri SPS, following issues are required to be resolved:

a) Currently, it was found that raw sewage keeps overflowing from the retaining wall even when the pumping from this SPS is around 25-30 MLD which is around 170 – 200% of the total capacity of SPS i.e., 15 MLD. Due to the amount of overloading on the SPS, overflow of the sewage from retaining wall cannot be stopped. Hence, UPJN is requested to please look into the matter and do the needful.
b) Repairing of boundary wall for the SPS is required.
c) Currently all submersible pumps in the SPS are OK for operations.
d) Both Mechanical screens are working.
e) Both DG sets are OK for operation.
f) Painting for all units in SPS is in progress.

30. At Lukerganj SPS,
    a) All 6 pumps are OK for operation. It is suggested to complete repairing of old pumps also so that they can be used during emergency situation.
    b) Calibration for the outlet flowmeter is completed.
    c) One mechanical screen is working and one is in maintenance.
    d) Painting for units is in progress
    e) Both DG sets are working.

31. Since COD is announced on 01.11.2020 for all Package – III facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

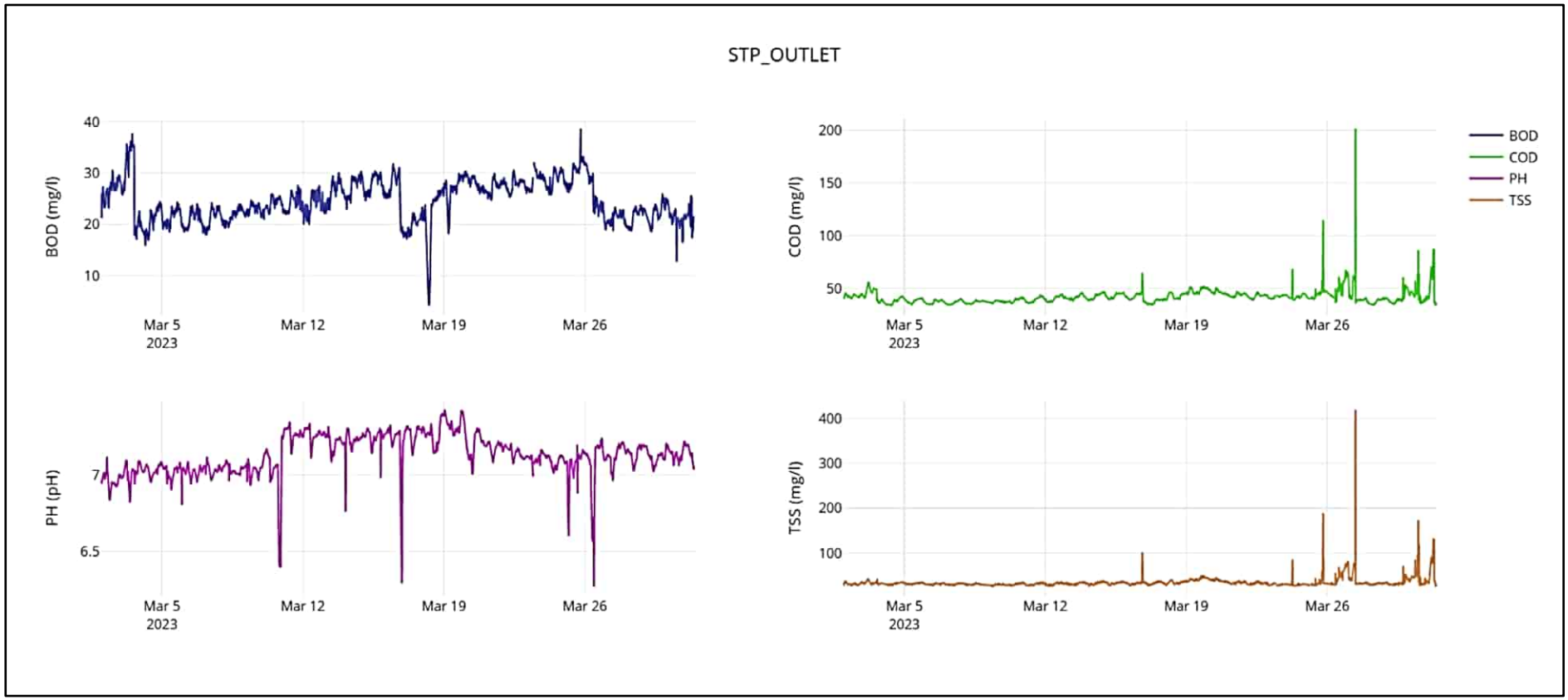
    a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
    b) Calibration for field instruments like multiparameter analyzer at inlet, outlet flowmeter, DO analyzers, level transmitter is not carried out yet. Calibration for lab instruments is completed but reports are not submitted yet. It is again reiterated that as per clause no. 9.8 (a)(viii) of Concession Agreement, "*The meters/devices shall be calibrated at the start of the relevant O&M Period and then at the start of each subsequent year during the relevant O&M Period in accordance with Good Industry Practices and the meters/devices shall be jointly tested by the Jal Nigam and the Concessionaire to ensure the accuracy of the meters installed by the Concessionaire".* Hence, Concessionaire is required to do the needful and submit reports timely at the start of each subsequent year of O&M.
    c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
    d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
    e) Quarterly report as per Part-G in Schedule-10 of CA.
    f) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
    g) Procedure for recording & disposal of complaints.
    h) Safety & Health Records. Incident reports must also be submitted along with action plan.
    i) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
    j) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

1.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of PSTs also for checking the efficiency of PSTs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- All the old material obtained due to rehabilitation works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

2. SALORI STP AND ASSOCIATE INFRASTRUCTURE

2.1 KPI Report



Source: Online analyzer,

*** BOD in Mg/L, COD in Mg/L and TSS in Mg/L**

Note: 1. Rectification of problem for variation in data is going on as calibration of multi parameter analyzer from OEM is in progress.

2. In the blank areas, data was not transfer due to some issue in router.

Salori STP, 29 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design- 29 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design- <9)	Final pH (Design- 6.5 to 9.0)	Inlet BOD (Design- <250 mg/l)	Final BOD (Design - <20 mg/l)	Inlet COD (Design- <500 mg/l)	Final COD (Design - <50 mg/l)	Inlet TSS (Design- <500 mg/l)	Final TSS (Design - <30 mg/l)	Inlet (Design - NA)	Final (Design - <1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Mar-23	36930	36.93	7.40	7.13	165	27	360	44	318	33	NA	700	0.3	25.2	1700000	Plant availability is 100%
2-Mar-23	38480	38.48	7.56	7.07	150	28	368	40	324	34	NA	800	0.3	24.9	1700000	Plant availability is 100%
3-Mar-23	37410	37.41	7.54	7.15	155	29	364	44	309	37	NA	700	0.2	24.6	1400000	Plant availability is 100%
4-Mar-23	42110	42.11	7.46	7.21	165	22	360	40	320	33	NA	600	0.3	25.3	1300000	Plant availability is 100%
5-Mar-23	41070	41.07	7.48	7.20	160	23	368	40	331	35	NA	700	0.2	25.2	1400000	Plant availability is 100%
6-Mar-23	39610	39.61	7.51	7.19	165	22	364	36	335	33	NA	800	0.3	24.8	1700000	Plant availability is 100%
7-Mar-23	41750	41.75	7.49	7.22	155	23	372	40	321	33	NA	700	0.3	24.6	1400000	Plant availability is 100%
8-Mar-23	42580	42.58	7.52	7.16	160	23	368	40	325	32	NA	800	0.2	25.3	1700000	Plant availability is 100%
9-Mar-23	45860	45.86	7.54	7.19	165	25	360	36	318	31	NA	600	0.3	24.7	1300000	Plant availability is 100%
10-Mar-23	40660	40.66	7.48	7.12	155	26	368	40	317	33	NA	700	0.2	24.5	1400000	Plant availability is 100%
11-Mar-23	40840	40.84	7.58	7.38	160	26	364	40	308	32	NA	600	0.3	25.3	1300000	Plant availability is 100%
12-Mar-23	44030	44.03	7.44	7.43	165	28	360	44	312	33	NA	800	0.2	25.1	1700000	Plant availability is 100%
13-Mar-23	43900	43.9	7.56	7.40	155	27	368	44	309	32	NA	700	0.3	24.8	1400000	Plant availability is 100%
14-Mar-23	42850	42.85	7.47	7.35	165	26	364	40	320	35	NA	600	0.3	24.6	1400000	Plant availability is 100%
15-Mar-23	43330	43.33	7.53	7.44	155	29	372	44	307	36	NA	800	0.2	24.7	1700000	Plant availability is 100%
16-Mar-23	44360	44.36	7.49	7.37	165	28	368	44	304	35	NA	700	0.3	25.3	1300000	Plant availability is 100%
17-Mar-23	35150	35.15	7.52	7.42	155	22	364	40	310	34	NA	600	0.2	25.4	1400000	Plant availability is 100%
18-Mar-23	36190	36.19	7.54	7.40	160	23	360	44	306	36	NA	500	0.3	25.2	1200000	Plant availability is 100%
19-Mar-23	30120	30.12	7.51	7.47	165	26	368	44	311	38	NA	400	0.2	24.8	1200000	Plant availability is 100%
20-Mar-23	37810	37.81	7.53	7.38	160	27	360	48	313	37	NA	500	0.2	24.7	1300000	Plant availability is 100%
21-Mar-23	38580	38.58	7.49	7.37	155	25	356	44	307	35	NA	600	0.3	23.9	1200000	Plant availability is 100%
22-Mar-23	35260	35.26	7.53	7.34	165	26	360	40	303	34	NA	700	0.2	23.6	1400000	Plant availability is 100%
23-Mar-23	35110	35.11	7.46	7.31	160	28	356	40	310	33	NA	500	0.3	24.2	1300000	Plant availability is 100%
24-Mar-23	40220	40.22	7.51	7.28	155	27	360	44	312	34	NA	800	0.3	23.6	1700000	Plant availability is 100%
25-Mar-23	39670	39.67	7.39	7.25	170	28	364	44	306	36	NA	600	0.2	24.5	1400000	Plant availability is 100%
26-Mar-23	39750	39.75	7.36	7.24	165	26	356	48	314	40	NA	700	0.3	23.9	1700000	Plant availability is 100%
27-Mar-23	37150	37.15	7.30	7.33	155	23	360	44	316	46	NA	400	0.2	23.6	1200000	Plant availability is 100%
28-Mar-23	37760	37.76	7.29	7.34	160	22	364	40	321	34	NA	600	0.3	24.8	1400000	Plant availability is 100%
29-Mar-23	36670	36.67	7.26	7.29	150	24	368	40	320	35	NA	700	0.3	24.4	1700000	Plant availability is 100%
30-Mar-23	34720	34.72	7.23	7.30	155	23	360	44	309	39	NA	800	0.3	25.4	1700000	Plant availability is 100%
31-Mar-23	37130	37.13	7.30	7.37	160	22	364	44	298	42	NA	400	0.2	24.8	1300000	Plant availability is 100%
Average	**39260.00**	**39.26**	**7.46**	**7.29**	**160.32**	**25.29**	**363.48**	**42.06**	**314.00**	**35.19**	**NA**	**648.39**	**0.25**	**24.70**	**1448387.10**	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken report

Month of Site Inspection	March 2023
Site Inspectors	1. Mr. Surendra Singh Parmar, PM-I, UPJN. 2. Mr. Abhishek Shrivastava, AE, UPJN. 3. Mr. Rahul Paswan, JE, UPJN. 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Kumar Tomar, AECOM. 6. Mr. Rahul Kumar Azaad, PWPL. 7. Mr. Vaibhav, PWPL
Place(s) of Inspection	• 29 MLD STP at Salori, Prayagraj. • 29 MLD MPS at Salori, Prayagraj.

Visit was done on 28th Feb 2023, 6th March 2023, 14th March 2023, 17th March 2023 and following observations were made after action taken by Concessionaire on Feb.23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Salori STP	36.93 to 45.86
2	Salori MPS	35.93 to 45.57

Note: 1) Source for above data is site record for flow of STP & MPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 30 mg/l	22 to 29 mg/l
2	TSS – Effluent	< 50 mg/l	31 to 37 mg/l
3	pH – Effluent	6.5 – 9.0	7.07 to 7.50
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	600 to 800 MPN/100 ml
5	Consistency – Sludge	> 20 %	24.50 to 25.30 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1300000 to 1700000 MPN/gTS

Note: 1) Source for above data is site record for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Salori STP	92.67 to 133.79
2	Salori Associated Infrastructure	31.12 to 54.07

Note: 1) Source for above data is site record for Power Consumption of STP.

- **Status of various units & records at site after action taken by Concessionaire on Feb.23month recommendation given by Project Engineer.**

1. Latest SCADA reports regarding KPIs for all STPs were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized as the values are recorded at an interval of 1 hour.
2. Variation can be seen in between recorded values of KPIs in laboratory and recorded values of KPIs in SCADA reports of inlet analyzers which are more than the prescribed limit given in 'Guidelines for Online Continuous Effluent Monitoring Systems (OCEMS)' by Central Pollution Control Board. For the rectifications of the problem, Concessionaire have informed that they are in process of replacing the current online analyzers at inlet with new ones. This is a long-term pending issue hence Concessionaire is required to do the needful at the earliest as per commitment given by them.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Current chlorine analyzer for the effluent is not giving correct values. Installation of new chlorine analyzer is pending.
5. Flowmeter at inlet of STP is working.
6. Flowmeter at outlet of STP is working.
7. All Grit Removal Units are working.
8. Both Mechanical Screens are working but mechanical screen no.2 is not lifting screenings efficiently. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period. Concessionaire is required to rectify the problem.
9. Both FAB units are working.
10. DO analyzers for both FAB units are not working, please rectify the problem.
11. All Aeration blowers are working.
12. Both clarisettlers are working. In Clarisettler no. 1, levelling of outlet launders must be checked as supernatant is not coming equally in all outlet lauders & this can affect the quality of effluent. Concessionaire to please look into the matter & rectify the problem at the earliest.
13. In clarisettlers it is observed that when agitators are operated, sludge starts coming to the top due to which quality deteriorates. Hence, it is suggested to do necessary modifications in agitators so that the problem can be rectified.
14. Quality of effluent is satisfactory.
15. For Sludge dewatering unit, installation of instruments (flowmeter for poly dosing line, etc.) is pending, Concessionaire to please do the needful.
16. Currently, 4 sludge drying beds are empty for emergency use. Concessionaire is suggested to get more drying beds empty. Also, filter media for sludge drying beds must be checked and replaced/refilled as per requirement.
17. Both Sludge transfer pumps for Clarisettler are working.
18. Both Filtrate pumps are working.
19. Both chlorinators and chlorine booster pumps are working.
20. Leak absorption system was checked in auto mode, but it was not working. Concessionaire is required to rectify the problem. Also, as instructed earlier also, checklist for the same must be prepared and recorded properly every month.

21. Thickener unit is working.
22. One out of two DGs is OK for operation. One DG is under maintenance due to problem in alternator.
23. It was found that sludge is being dumped within the STP. Concessionaire to please look into the matter and dump sludge only in the land which is being allotted by UPJN for sludge disposal.
24. At Salori MPS, 5 pumps out of 6 are OK for operation, one is under maintenance. Since the programming for running pumps in auto mode is completed, it is suggested to operate them in auto mode for optimum performance.
25. At Salori MPS, it is suggested to rectify problems in old pumps also so that they be used in emergency Currently, all old pumps are not in working condition.
26. At Salori MPS, one coarse screen is working, and one coarse screen is in maintenance before sump due to which lot of waste is passing and pumps are getting choked and lot of wear and tear is happening in the which lot of waste is passing and pumps are getting choked and lot of wear and tear is happening in the pumps. Hence, UPJN is requested to instruct M/s Passavant to rectify the problem.
27. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.
28. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This must be implemented from day 1 of O&M period but the same is not completed till date, Concessionaire to please do the needful.
29. Installation & commissioning of Public Address System is not completed yet.
30. Housekeeping near FeCl3 dosing system needs to be improved.
31. In SCADA system, flow variation can be seen in recorded values of daily and monthly flow as per site records. Also, there is variation in between flow recorded in SCADA reports and flow recorded in logbooks. This problem must be rectified.
32. There is variation in recorded values of flow from inlet flowmeter at Salori STP and outlet flowmeter of Salori STP, please rectify the problem.
33. Housekeeping in dewatering area must be improved, lot of sludge can be seen scattered in this area.
34. All CCTV cameras are working
35. Since COD is announced on 01.11.2020 for all Package – III facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

    a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
    b) Calibration for field instruments like multiparameter analyzer at inlet, outlet flowmeter, DO analyzers, level transmitter is not carried out yet. Calibration for lab instruments is completed but reports are not submitted yet. It is again reiterated that as per clause no. 9.8 (a)(viii) of Concession Agreement, "*The meters/devices shall be calibrated at the start of the relevant O&M Period and then at the start of each subsequent year during the relevant O&M Period in accordance with Good Industry Practices and the meters/devices shall be jointly tested by the Jal Nigam and the Concessionaire to ensure the accuracy of the meters installed by the Concessionaire".* Hence, Concessionaire is required to do the needful and submit reports timely at the start of

each subsequent year of O&M.

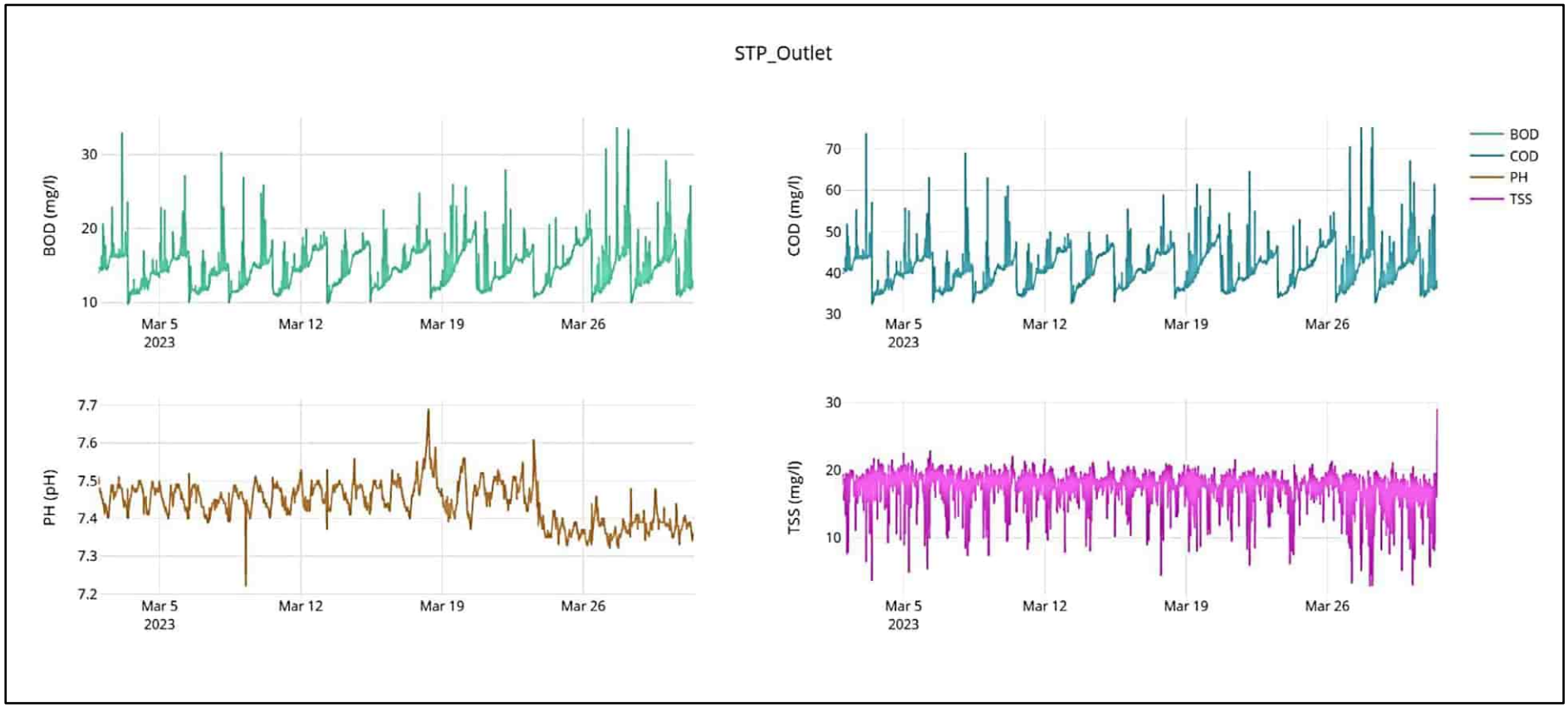
c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
e) Quarterly report as per Part-G in Schedule-10 of CA.
f) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
g) Procedure for recording & disposal of complaints.
h) Safety & Health Records. Incident reports must also be submitted along with action plan.
i) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
j) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

2.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of PSTs also for checking the efficiency of PSTs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- All the old material obtained due to rehabilitation works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

3. KODRA STP AND ASSOCIATE INFRASTRUCTURE

3.1 KPI Report



Source: Online analyzer,

*** BOD in Mg/L, COD in Mg/L and TSS in Mg/L**

Note: 1. Rectification of problem for variation in data is going on as calibration of multi parameter analyzer from OEM is in progress.

2. In the blank areas, data was not transfer due to some issue in router.

kodra STP, 25 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design- 10 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design- <9)	Final pH (Design- 6.5 to 8.0)	Inlet BOD (Design- <250 mg/l)	Final BOD (Design - <20 mg/l)	Inlet COD (Design- <500 mg/l)	Final COD (Design- <50 mg/l)	Inlet TSS (Design- <500 mg/l)	Final TSS (Design - <30 mg/l)	Inlet (Design - NA)	Final (Design - <1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Mar-23	30180	30.18	7.23	7.45	145	15	308	40	280	18	NA	400	0.2	24.63	1300000	Plant availability is 100%
2-Mar-23	28880	28.88	7.26	7.58	155	14	320	44	273	19	NA	500	0.3	23.31	1400000	Plant availability is 100%
3-Mar-23	29240	29.24	7.21	7.51	140	13	312	36	265	18	NA	600	0.2	24.14	1700000	Plant availability is 100%
4-Mar-23	28760	28.76	7.25	7.53	135	15	304	40	270	19	NA	500	0.2	23.51	1300000	Plant availability is 100%
5-Mar-23	29850	29.85	7.2	7.48	140	16	316	44	261	20	NA	700	0.3	23.87	1200000	Plant availability is 100%
6-Mar-23	29670	29.67	7.22	7.41	150	14	324	40	279	19	NA	500	0.2	24.11	1400000	Plant availability is 100%
7-Mar-23	30410	30.41	7.27	7.51	145	13	312	36	285	18	NA	600	0.3	23.71	1300000	Plant availability is 100%
8-Mar-23	32080	32.08	7.24	7.43	135	15	320	40	275	17	NA	400	0.2	24.28	1700000	Plant availability is 100%
9-Mar-23	30760	30.76	7.29	7.47	130	14	308	36	264	21	NA	500	0.2	23.46	1400000	Plant availability is 100%
10-Mar-23	30800	30.8	7.23	7.42	140	15	316	40	276	18	NA	600	0.3	24.16	1300000	Plant availability is 100%
11-Mar-23	30220	30.22	7.26	7.5	135	13	304	36	281	17	NA	700	0.2	24.36	1200000	Plant availability is 100%
12-Mar-23	30540	30.54	7.22	7.48	145	17	312	44	273	19	NA	500	0.3	23.53	1400000	Plant availability is 100%
13-Mar-23	29160	29.16	7.31	7.54	130	14	308	36	284	20	NA	600	0.2	24.35	1300000	Plant availability is 100%
14-Mar-23	29390	29.39	7.25	7.46	145	16	320	40	266	18	NA	400	0.2	24.41	1700000	Plant availability is 100%
15-Mar-23	30750	30.75	7.21	7.44	155	15	328	44	259	20	NA	500	0.3	23.15	1400000	Plant availability is 100%
16-Mar-23	28720	28.72	7.27	7.51	150	13	316	36	277	19	NA	600	0.2	24.36	1300000	Plant availability is 100%
17-Mar-23	28410	28.41	7.24	7.45	140	15	312	40	282	21	NA	500	0.3	24.61	1200000	Plant availability is 100%
18-Mar-23	29750	29.75	7.31	7.56	145	14	324	44	278	18	NA	600	0.3	23.48	1400000	Plant availability is 100%
19-Mar-23	21360	21.36	7.26	7.53	135	15	308	40	265	19	NA	700	0.2	24.44	1200000	Plant availability is 100%
20-Mar-23	28280	28.28	7.23	7.49	140	16	316	44	275	18	NA	500	0.2	24.15	1300000	Plant availability is 100%
21-Mar-23	30090	30.09	7.29	7.54	150	13	320	36	280	21	NA	400	0.3	23.86	1700000	Plant availability is 100%
22-Mar-23	30360	30.36	7.31	7.58	145	14	312	40	268	20	NA	600	0.2	24.28	1400000	Plant availability is 100%
23-Mar-23	27850	27.85	7.22	7.42	140	15	308	44	283	19	NA	500	0.3	23.31	1300000	Plant availability is 100%
24-Mar-23	29520	29.52	7.19	7.48	135	12	304	36	270	21	NA	700	0.2	24.11	1200000	Plant availability is 100%
25-Mar-23	28580	28.58	7.24	7.51	140	11	316	32	261	20	NA	600	0.3	24.65	1400000	Plant availability is 100%
26-Mar-23	28870	28.87	7.21	7.47	155	12	324	36	276	21	NA	400	0.2	23.18	1200000	Plant availability is 100%
27-Mar-23	26240	26.24	7.19	7.41	145	14	312	40	266	17	NA	500	0.3	22.94	1300000	Plant availability is 100%
28-Mar-23	27300	27.3	7.23	7.46	140	15	320	44	258	15	NA	600	0.2	22.67	1400000	Plant availability is 100%
29-Mar-23	27510	27.51	7.25	7.5	135	14	308	40	271	18	NA	500	0.3	23.34	1700000	Plant availability is 100%
30-Mar-23	25680	25.68	7.22	7.53	145	18	316	48	281	15	NA	700	0.2	24.09	1300000	Plant availability is 100%
31-Mar-23	28250	28.25	7.27	7.55	130	15	304	44	275	19	NA	500	0.2	24.31	1200000	Plant availability is 100%
Average	**28950.32**	**28.95**	**7.24**	**7.49**	**141.77**	**14.35**	**313.94**	**40.00**	**272.81**	**18.81**	**NA**	**545.16**	**0.24**	**23.90**	**1370967.74**	

Source: Logbook of Laboratory at Sewage Treatment Plant

3.2 Action taken report

Month of Site Inspection	March 2023
Site Inspectors	1. Mr. Surendra Singh Parmar, PM-I, UPJN. 2. Ms. Shilpa, AE, UPJN. 3. Mr. Narendra, JE, UPJN. 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Kumar Tomar, AECOM. 6. Mr. Rahul Azaad, PWPL. 7. Mr. Rajan, PWPL.
Place(s) of Inspection	• 25 MLD STP at Kodra, Prayagraj • 25 MLD MPS at Kodra, Prayagraj

Visit was done on 27th Feb 2023, 4rt March 2023, 13th March 2023, 18th March 2023, and following observations were made after action taken by Concessionaire on Feb.23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Kodra STP	28.76 to 32.08
2	Kodra MPS	28.76 to 32.08

Note: 1) Source for above data is Register for flow record of STP & MPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	13 to 16 mg/l
2	TSS – Effluent	< 30 mg/l	17 to 21 mg/l
3	pH – Effluent	6.5 – 9.0	7.41 to 7.58
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.31 to 24.63%
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1200000 to 1700000 MPN/gTS

Note: 1) Source for above data is Register for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Kodra STP	84.20 to 100.65
2	Kodra Associated Infrastructure	94.28 to 104.31

Note: 1) Source for above data is Register for Power Consumption Record of STP.

- **Status of various units & records at site after action taken by Concessionaire on Feb.23month recommendation given by Project Engineer.**

1. Latest SCADA reports regarding KPIs for all STPs were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized as the values are recorded at an interval of 1 hour.
2. Variation can be seen in between recorded values of KPIs in laboratory and recorded values of KPIs in SCADA reports of inlet analyzers which are more than the prescribed limit given in 'Guidelines for Online Continuous Effluent Monitoring Systems (OCEMS)' by Central Pollution Control Board. For the rectifications of the problem, Concessionaire have informed that they are in process of replacing the current online analyzers at inlet with new ones. This is a long-term pending issue hence Concessionaire is required to do the needful at the earliest as per commitment given by them. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Flowmeter at inlet of STP is working.
5. Flowmeter at outlet of STP is working.
6. Both grit removal unit are working.
7. Both Mechanical Fine Screens at PTU are working. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
8. All Biotowers are working. Small amount of plastic waste is reaching the biotowers which must be rectified by doing overhauling of mechanical screens at PTU.
9. All Aeration tanks are working.
10. Both DO Analyzer are not working at outlet of aeration tanks.
11. All Aeration blowers are working.
12. All Centrifuges are in working condition.
13. Drainage system must be provided near the sludge collection area of dewatering system for avoiding sludge accumulation.
14. All Sludge Recirculation Pumps are working.
15. Both Centrifuge Feed Pumps are working.
16. Both Secondary Clarifiers are working.
17. Thickener unit is working.
18. Both Chlorine Dosing Systems are working. Residual chlorine in effluent was found to be around 0.2 to 0.3 mg/l.
19. Current chlorine analyzer for the effluent is not giving correct values. Installation of new chlorine analyzers is pending.
20. It is continuously observed that dewatered sludge is being dumped inside the plant. Concessionaire is required to dump the dewatered sludge in the place given by UPJN.
21. There is variation in recorded values of flow from inlet flowmeter at Kodra STP and outlet flowmeter of Kodra STP, please rectify the problem.
22. One Mechanical coarse Screens at MPS is working. One Mechanical coarse Screens is under maintenance Though the screens are running in auto mode through timer,

differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.

23. At Kodra MPS, all 6 pumps are OK for operation. Pressure transmitter is not installed in common header line of pumps yet. Also, pumps must be kept in auto mode so that they can start & stop on the basis of level in the sump.
24. At Kodra MPS, it is suggested to rectify problems in old pumps also so that they be used in emergency situation. Currently, all old pumps are not in working condition.
25. Landscaping of site must be improved; it needs to be made better.
26. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.
27. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not started yet, Concessionaire to please do the needful.
28. Installation of Public Address System is done but its commissioning is not completed yet.
29. Painting of units in the STP is completed from outside. It is suggested to start the painting work for all units from inside also.
30. Since COD is announced on 01.11.2020 for all Package – III facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

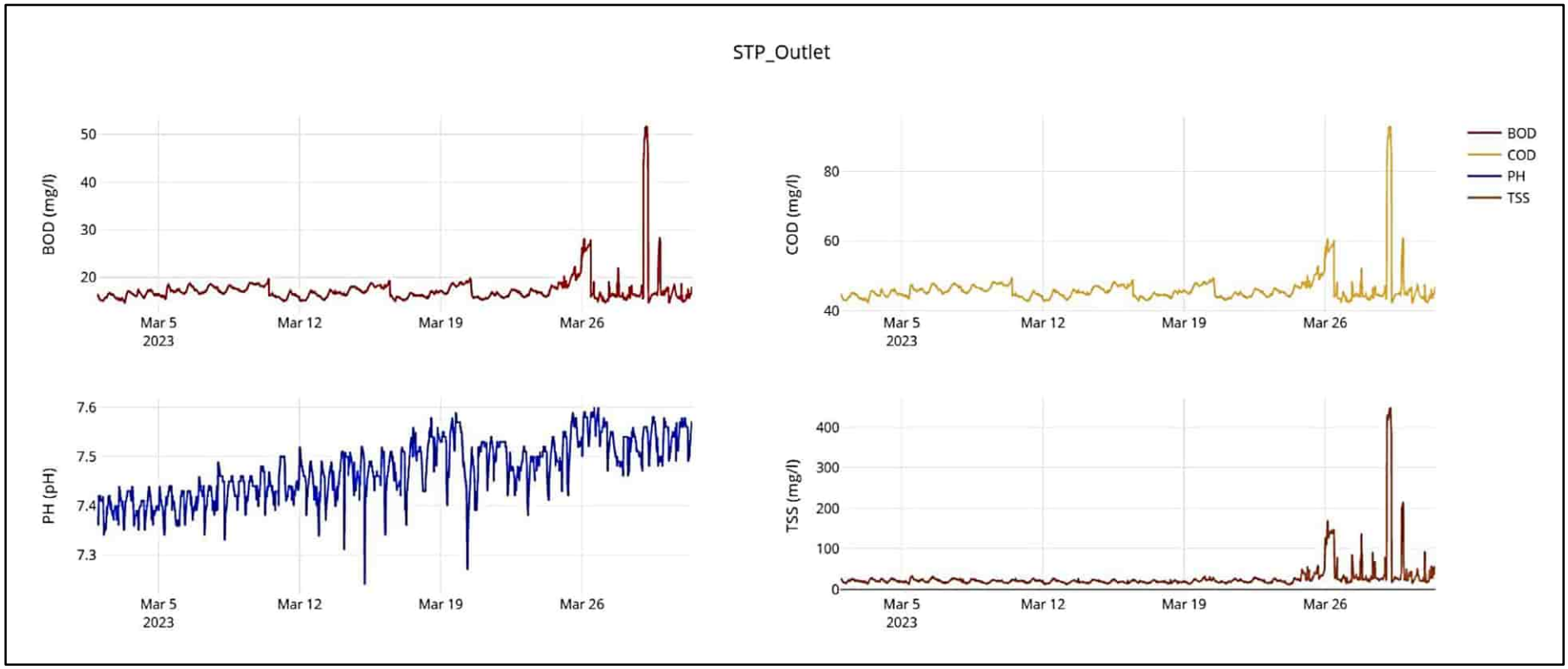
    a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
    b) Calibration for field instruments like multiparameter analyzer at inlet, outlet flowmeter, DO analyzers, level transmitter is not carried out yet. Calibration for lab instruments is completed but reports are not submitted yet. It is again reiterated that as per clause no. 9.8 (a)(viii) of Concession Agreement, "*The meters/devices shall be calibrated at the start of the relevant O&M Period and then at the start of each subsequent year during the relevant O&M Period in accordance with Good Industry Practices and the meters/devices shall be jointly tested by the Jal Nigam and the Concessionaire to ensure the accuracy of the meters installed by the Concessionaire".* Hence, Concessionaire is required to do the needful and submit reports timely at the start of each subsequent year of O&M.
    c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
    d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
    e) Quarterly report as per Part-G in Schedule-10 of CA.
    f) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
    g) Procedure for recording & disposal of complaints.
    h) Safety & Health Records. Incident reports must also be submitted along with action plan.
    i) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
    j) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

3.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of PSTs also for checking the efficiency of PSTs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- All the old material obtained due to rehabilitation works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.

4. PONGHAT STP AND ASSOCIATE INFRASTRUCTURE

4.1 KPI Report



Source: Online analyzer,

*** BOD in Mg/L, COD in Mg/L and TSS in Mg/L**

Note: 1. Rectification of problem for variation in data is going on as calibration of multi parameter analyzer from OEM is in progress.

2. In the blank areas, data was not transfer due to some issue in router.

Ponghat STP, 10 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design-10 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design-<9)	Final pH (Design-6.5 to 9.0)	Inlet BOD (Design-<250 mg/l)	Final BOD (Design-<20 mg/l)	Inlet COD (Design-<500 mg/l)	Final COD (Design-<50 mg/l)	Inlet TSS (Design-<500 mg/l)	Final TSS (Design-<30 mg/l)	Inlet (Design-NA)	Final (Design-<1000 MPN/100 ml)	Final (Design-0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Mar-23	13700	13.70	7.21	7.35	155	17	312	44	284	25	NA	600	0.3	22.61	1400000	Plant availability is 100%
2-Mar-23	12650	12.65	7.26	7.41	145	15	308	48	296	22	NA	400	0.2	23.49	1500000	Plant availability is 100%
3-Mar-23	12490	12.49	7.3	7.44	150	17	304	44	280	19	NA	500	0.3	23.18	1300000	Plant availability is 100%
4-Mar-23	12700	12.70	7.32	7.42	140	16	300	48	292	23	NA	700	0.3	23.96	1400000	Plant availability is 100%
5-Mar-23	13460	13.46	7.33	7.43	135	17	295	44	286	22	NA	600	0.2	23.09	1700000	Plant availability is 100%
6-Mar-23	11500	11.50	7.28	7.48	145	18	308	44	276	20	NA	500	0.2	23.51	1500000	Plant availability is 100%
7-Mar-23	14300	14.03	7.25	7.51	150	16	316	48	281	22	NA	600	0.3	23.66	1300000	Plant availability is 100%
8-Mar-23	13620	13.62	7.36	7.38	135	17	306	44	278	21	NA	500	0.3	23.74	1400000	Plant availability is 100%
9-Mar-23	13200	13.20	7.29	7.45	130	19	312	48	266	20	NA	400	0.2	22.43	1300000	Plant availability is 100%
10-Mar-23	12520	12.52	7.28	7.52	150	16	308	44	284	21	NA	600	0.3	23.56	1400000	Plant availability is 100%
11-Mar-23	13040	13.04	7.39	7.48	135	15	304	48	298	20	NA	400	0.3	24.81	1200000	Plant availability is 100%
12-Mar-23	13110	13.11	7.27	7.41	155	17	302	44	284	19	NA	500	0.3	23.19	1300000	Plant availability is 100%
13-Mar-23	13440	13.44	7.29	7.4	145	18	312	48	276	18	NA	400	0.3	23.93	1200000	Plant availability is 100%
14-Mar-23	13810	13.81	7.28	7.47	140	16	300	44	292	17	NA	700	0.2	23.12	1400000	Plant availability is 100%
15-Mar-23	12910	12.91	7.24	7.41	135	17	308	48	290	20	NA	500	0.3	22.7	1200000	Plant availability is 100%
16-Mar-23	13900	13.90	7.29	7.43	155	18	309	44	288	19	NA	400	0.3	23.02	1500000	Plant availability is 100%
17-Mar-23	13430	13.43	7.32	7.44	130	16	304	48	293	17	NA	500	0.3	24.31	1400000	Plant availability is 100%
18-Mar-23	13140	13.14	7.35	7.48	145	17	308	44	284	19	NA	600	0.3	22.66	1700000	Plant availability is 100%
19-Mar-23	13730	13.73	7.42	7.52	135	18	316	48	296	21	NA	400	0.2	23.51	1400000	Plant availability is 100%
20-Mar-23	13890	13.89	7.4	7.44	140	16	312	44	284	23	NA	600	0.3	23.3	1700000	Plant availability is 100%
21-Mar-23	13410	13.41	7.38	7.46	130	17	302	48	274	22	NA	500	0.3	23.78	1400000	Plant availability is 100%
22-Mar-23	13440	13.94	7.32	7.41	150	18	306	44	289	21	NA	400	0.3	22.42	1200000	Plant availability is 100%
23-Mar-23	12730	12.73	7.34	7.43	145	17	308	48	278	20	NA	600	0.3	22.61	1400000	Plant availability is 100%
24-Mar-23	13150	13.50	7.28	7.41	150	18	300	44	298	22	NA	700	0.3	22.91	1500000	Plant availability is 100%
25-Mar-23	13580	12.91	7.29	7.43	135	16	312	48	266	21	NA	400	0.3	23.78	1400000	Plant availability is 100%
26-Mar-23	13580	13.58	7.3	7.49	140	17	304	44	282	24	NA	600	0.3	23.61	1200000	Plant availability is 100%
27-Mar-23	12810	12.81	7.32	7.47	130	15	309	48	264	29	NA	400	0.3	22.93	1400000	Plant availability is 100%
28-Mar-23	12160	12.16	7.34	7.48	140	19	302	44	281	25	NA	700	0.2	23.36	1300000	Plant availability is 100%
29-Mar-23	12700	12.70	7.32	7.46	135	17	308	48	285	28	NA	500	0.3	23.63	1200000	Plant availability is 100%
30-Mar-23	12570	12.57	7.36	7.49	150	15	312	44	298	27	NA	400	0.3	22.8	1400000	Plant availability is 100%
31-Mar-23	13910	13.88	7.34	7.47	145	18	298	48	304	26	NA	600	0.3	22.32	1200000	Plant availability is 100%
Average	13192.90	13.19	7.31	7.45	141.94	16.87	306.61	45.94	284.77	21.74	NA	522.58	0.28	23.29	1380645.16	

Source: Logbook of Laboratory at Sewage Treatment Plant

4.2 Inspection Report

Month of Site Inspection	March 2023
Site Inspectors	1. Mr. Surendra Singh Parmar, PM-I, UPJN. 2. Ms. Shilpa, AE, UPJN. 3. Mr. Narendra, JE, UPJN. 4. Mr. Gaurav Gupta, AECOM. 5. Mr. Sudhir Kumar Tomar, AECOM. 6. Mr. Rahul Azaad, PWPL. 7. Mr. Anjani, PWPL.
Place(s) of Inspection	• 10 MLD STP at Ponghat, Prayagraj • 10 MLD MPS at Ponghat, Prayagraj

Visit was done on 27th Feb 2023, 4rt March 2023, 13th March 2023, 18th March 2023 and following observations were made after action taken by Concessionaire on Feb.23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Ponghat STP	11.90 to 14.03
2	Ponghat MPS	11.90 to 14.03

Note: 1) Source for above data is Register for flow record of STP & MPS.

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	15 to 19
2	TSS – Effluent	< 30 mg/l	17 to 25
3	pH – Effluent	6.5 – 9.0	7.35 to 7.52
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700
5	Consistency – Sludge	> 20 %	22.43 to 24.31
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1200000 to 1700000

Note: 1) Source for above data is Register for Laboratory of STP.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Ponght STP	121.17 to 149.11
2	Ponght Associated Infrastructure	89.72 to 95.47

Note: 1) Source for above data is Register for Power Consumption Record of STP.

- **Status of various units & records at site after action taken by Concessionaire on Feb.23month recommendation given by Project Engineer.**

1. Latest SCADA reports regarding KPIs for all STPs were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized as the values are recorded at an interval of 1 hour.
2. Variation can be seen in between recorded values of KPIs in laboratory and recorded values of KPIs in SCADA reports of inlet analyzers which are more than the prescribed limit given in 'Guidelines for Online Continuous Effluent Monitoring Systems (OCEMS)' by Central Pollution Control Board. For the rectifications of the problem, Concessionaire have informed that they are in process of replacing the current online analyzers at inlet with new ones. This is a long-term pending issue hence Concessionaire is required to do the needful at the earliest as per commitment given by them. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Flowmeter at inlet of STP is working.
5. Flowmeter at outlet of STP is working but it is not showing correct readings as compared to that of inlet flowmeter.
6. Both Mechanical fine screens at PTU are working. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
7. Both Grit Removal Units are working.
8. Both Biotowers are working. Small amount of plastic waste is reaching the biotowers which must be rectified by doing overhauling of mechanical screens at PTU.
9. All Aeration tanks are working.
10. Both DO Analyzers at aeration tanks are not working.
11. All Aeration Air Blowers are working.
12. All Centrifuges are working along with Sludge Feed pumps and Poly dosing pumps. Sludge generation is 5–6 trolleys per day.
13. Quality of effluent is satisfactory.
14. Drainage system must be provided near the sludge collection area of dewatering system for avoiding sludge accumulation.
15. Both Sludge Recirculation Pumps are working.
16. Both Chlorine Dosing Systems are working. Residual chlorine in effluent was found to be 0.2 to 0.3 mg/l.
17. Current, Chlorine analyzer for the effluent is not giving correct values. Installation of new chlorine analyzers is pending.
18. It is continuously observed that dewatered sludge is being dumped inside the plant. Concessionaire is required to dump the dewatered sludge in the place given by UPJN.
19. At Ponghat MPS, all 6 pumps are OK for operation. Presser transmitter is not installed at pump discharge common header.
20. Both mechanical coarses screen at MPS are working. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.

21. At Ponghat MPS, it is suggested to rectify problems in old pumps also so that they be used in emergency situation. Currently, all old pumps are not in working condition.
22. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.
23. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. This is not started yet, Concessionaire to please do the needful.
24. Installation of Public Address System is done but its commissioning is not completed yet.
25. Painting of units in the STP is completed from outside. It is suggested to start the painting work for all units from inside also.
26. Since COD is announced on 01.11.2020 for all Package – III facilities hence Concessionaire is required to implement following documents as per Clause no. 9 & Part-G in Schedule – 10 of Concession Agreement at the earliest:

    a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
    b) Calibration for field instruments like multiparameter analyzer at inlet, outlet flowmeter, DO analyzers, level transmitter is not carried out yet. Calibration for lab instruments is completed but reports are not submitted yet. It is again reiterated that as per clause no. 9.8 (a)(viii) of Concession Agreement, "*The meters/devices shall be calibrated at the start of the relevant O&M Period and then at the start of each subsequent year during the relevant O&M Period in accordance with Good Industry Practices and the meters/devices shall be jointly tested by the Jal Nigam and the Concessionaire to ensure the accuracy of the meters installed by the Concessionaire".* Hence, Concessionaire is required to do the needful and submit reports timely at the start of each subsequent year of O&M.
    c) Testing of TN, NH4-N, TP for composite samples each day as per Part-G in Schedule-10 of CA.
    d) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
    e) Quarterly report as per Part-G in Schedule-10 of CA.
    f) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
    g) Procedure for recording & disposal of complaints.
    h) Safety & Health Records. Incident reports must also be submitted along with action plan.
    i) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
    j) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

4.3 Recommendation's

- Some of the issues mentioned above are pending since long time and hence must be rectified at the earliest for enhancing the efficiency of the STP.
- Concessionaire must ensure satisfactory working of Online monitoring system & transmit the data as per requirement.
- All the maintenance jobs required for the observations made above must be done as soon as possible to increase the efficiency of plant.
- Permits must be used for all kind of maintenance jobs whether it is Preventive or Corrective. Concessionaire to please ensure the same.
- All the records must be provided as per the observations made above.
- All logbooks must be filled timely and accurately.
- Testing of samples must be done from outlet of PSTs also for checking the efficiency of PSTs.
- Concessionaire to please ensure that all the testing must be done as per the clause no. 1.7.9 of Part-G in Concession Agreement.
- All the old material obtained due to rehabilitation works in various units must be stacked properly at the identified part of the site and proper record must be maintained.
- It is recommended to follow proper safety measures during O&M, and it must be ensured that workers must wear proper PPEs while doing work at Site.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

ANNEXURE-IV

PROJECT ENGINEER ACTIVITY AS PER TOR

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
4.1 (i)	Review, analysis and qualifying assessment of field investigations carried out and reported by the Concessionaire in respect of topographical surveys, hydraulic & hydrologic data verification, sub-surface investigation including laboratory testing and reports of geologists wherever applicable, investigation of construction material including lab testing.	Yes	Yes	Review of Construction material including lab testing.
4,1(ii)	Review, analysis and qualifying assessment of Design Memorandums, specifications and construction drawings prepared and submitted by the concessionaire.	Yes	Yes	Review of construction drawing
4.1(iii)	Conduct Kick Off meetings	Yes	NA	NA
4.1(iv)	Review and monitor the submissions of the Concessionaire such as: a. Work Schedule b. Detailed Survey report c. Basic Engineering d. Detailed design and Drawings for i. Civil Works 1. Geo-tech reports 2. Lab testing reports 3. Third Party Inspection report ii. Mechanical and Electrical Works iii. Automation and Instrumentation works iv. Any other allied works e.QA/QC plans	Yes	Yes	Review of remaining drawing design of Civil/Mech/Electrical

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	f. Environment Health and Safety Plan, material safety data and hazardous chemicals if any.			
4.1(v)	Review of the Drawings and Documents as set forth in Paragraph 4 and 5;	Yes	Yes	Yes
4.1(vi)	Identification of Construction Milestones & Project progress monitoring and issue of Milestone Construction Certificates, Construction Completion Certificate, monitoring Trail run, recommendations for issuance of COD certificate by Jal Nigam etc..	Review and Monitoring of project	Review and Monitoring of project	Review and Monitoring of project
4.1(vii)	To Assist NMCG for getting Statutory permissions	NA	NA	NA
4.1(viii)	Ensure compliance with Statutory provisions under various applicable laws	Yes	Yes	Yes
4.1(ix)	Review, inspection, supervision and monitoring of Construction Works as set forth in Paragraph 6; conducting Tests on completion of construction and issuing Completion/ Provisional Certificate as set forth in Paragraph 6	Yes	Yes	Yes
	Review, inspection and monitoring of O&M as set forth in Paragraph 6;	Yes	Yes	Yes
	determining, as required under the Concession Agreement, the costs of any works or	NA	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	services and/or their reasonableness;			
	determining, as required under the Concession Agreement, the period or any extension thereof, for performing any duty or obligation	Yes	Yes	Yes
	Determining the Events of default and guidance on consequent Termination notices and Payment as detailed in clauses 16.1 to 16.5of the Concession Agreement	NA	NA	NA
	Determine deficiencies in the commissioning & trial runs; prepare the final acceptance document for acceptance of commissioning & trial runs. Prepare & Issue Commercial Operation certificate through Uttar Pradesh Jal Nigam	Yes	Yes	Yes
	Any other matter which is not specified in ((vi),(vii), or (viii) above and which creates an obligation or liability on the Employer /NMCG beyond the provisions of the Concession Agreement.	Yes	Yes	Yes
4.1(x)	Ensuring Interim Availability of the existing Facilities during construction period and certifying Scheduled Outages during Scheduled Maintenance.	NA	NA	NA
4.1(xi)	The Project Engineer shall submit regular periodic reports, as specified in the Concession Agreement to Uttar Pradesh Jal Nigam and	YES	YES	YES

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	NMCG, in respect of its duties and functions under the Concession Agreement.			
4.1(xii)	The Project Engineer shall aid and advise the Employer on any proposal for variation under Article 20 of the Concession Agreement.	Yes	Yes	Yes
4.1(xiii)	Assisting the Parties in resolution of Disputes as set forth in Paragraph 9;	Yes	Yes	Yes
4.1(xiv)	Assisting the employer in the fulfilment of Hand back requirements as detailed in clause 20.3 of the Concession Agreement; and	NA	NA	NA
4.1(xv)	Undertaking all other duties and functions in accordance with this agreement. Project Engineer shall utilize best of analytical tools /computational models for review/analysis of structural/hydraulics wherever essential.	Yes	Yes	Yes
4.2	The Project Engineer shall discharge its duties in an efficient manner, consistent with the highest standards of professionalism and Good Industry Practice.	Yes	Yes	Yes
4.3	The Project Engineer must function in a manner to assist and equip the employer to ascertain that the Concessionaire shall operate and maintain the Facilities in a manner that: (i) Is in compliance with the Technical Specifications,	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Applicable Laws, Applicable Permits and Good Industry Practice; Results in the Facilities achieving the KPIs as detailed in schedule 9of the Concession Agreement and certify within 7 days the KPI adherence Report as per clause 9.12 of the Concession Agreement; (ii) Ensures that the Allahabad Facilities are capable of treating Sewage up to the Design Capacity on a daily basis; (iii) Ensures efficient treatment of Sewage and handling and disposal of STPs By- Products and the Treated Effluent (iv) STPs are safe and reliable, subject to normal wear and tear of the Facilities and the Associated Infrastructure; (v) Is in compliance with the technology license agreement executed by the Concessionaire for the technology, processes, know-how and systems used or incorporated into the Facilities and/or the Associated Infrastructure; (vi) Maintains the safety and security of personnel, material and property at the Site, in accordance with the approved EHS Plan, Applicable			

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Laws and Applicable Permits; and (vii) Ensures that all waste materials and hazardous substances are stored and/or disposed in accordance with the EHS Plan, Applicable Laws and Applicable Permits.			
4.4	Overall, The Project Engineer shall assist the Uttar Pradesh Jal Nigam in supervising the construction, rehabilitation, operation and maintenance of the Facilities and shall work closely with the Uttar Pradesh Jal Nigam and NMCG to monitor compliance with the KPIs. The detailed scope of work of the Project Engineer during various stages of the project, to be read in conjunction with the provisions of the Concession Agreement, is outlined in Paragraphs 4-12 of the TOR.	Yes	Yes	Yes
5.1	During the Development Period, the Project Engineer shall undertake a detailed review of the basic engineering Designs, furnished by the Concessionaire along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys and Sewage Flow Analysis. The Project Engineer shall complete such review and	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	send its comments/observations to the Uttar Pradesh Jal Nigam and the Concessionaire within 10 (ten) days of receipt of such Drawings. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.			
5.2	The Project Engineer shall review and assist the Uttar Pradesh Jal Nigam in approval of the submissions by the concessionaire relating to the "design and, Construction Plan, rehabilitation Plan of existing facilities" so as to confirm to the scope as per Schedule 1 of the Concession Agreement.	Yes	Yes	Yes
5.3	The basic engineering drawings for the construction and rehabilitation in the above case shall mean the designs and documents to be submitted by the Concessionaire and approved by the Uttar Pradesh Jal Nigam as a Condition Precedent and shall include but not limited to (a) Conduct Kick off meeting, Scrutiny of contractor's submittals (b) Process description, process calculations and hydraulic calculations;	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	(c) List of design codes and standards; (d) Master drawing schedule; (e) Drainage design; (f) STP Facilities layout; (g) Process flow diagram; (h) Hydraulic flow diagram; (i) Mass balance diagram; (j) Process and instrumentation diagram; (k) Single line diagram; (l) Electrical load list; and (m) Structure design and drawings (n) Pump Characteristics and (o) General arrangement diagrams of all units of Facilities and; (p) Any other information, design, drawings, etc needed for effective development/rehabilitation and operation of Facilities..			
5.4	The Project Engineer shall review any modified Drawings or supporting Documents sent to it by the Concessionaire and furnish its comments within 10 (ten) days of receiving such Drawings or Documents.	Yes	Yes	Yes
5.5	The Project Engineer shall review the detailed design, construction methodology, quality assurance procedures and the procurement, engineering and construction time schedule sent to it by the	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Concessionaire and furnish its comments within 10 (ten) days of receipt thereof.			
5.6	Upon reference by the NMCG/Uttar Pradesh Jal Nigam, the Project Engineer shall review and; comment on the EPC Contract or any other contract for construction, operation and maintenance of the Project, and furnish its comments within 10 (ten) days from receipt of such reference from the NMCG/Uttar Pradesh Jal Nigam	NA	NA	NA
6.1	In respect of the Designs Drawing and Documents received by the Project Engineer for its review and comments during the Construction Period, the provisions of Paragraph 4 shall also apply, mutatis mutandis.	Yes	Yes	Yes
6.2	The Project Engineer shall review, and assist the Uttar Pradesh Jal Nigam in reviewing the submissions by the concessionaire, the Construction plan as defined in clause 8.3, 8.4 and 8.5 of the Concession Agreement including Phase 1 and Phase II Design & Drawings, as well as the 'As Built' drawings on completion and EHS plans as defined in clause 8.6 of the Concession Agreement.	Yes	Yes	Yes
6.3	The Project Engineer shall assist the Uttar Pradesh Jal Nigam submit their comments	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	on effectiveness or otherwise of the Work plan submitted for meeting the specified payment milestones and completion of the work on or before the scheduled construction completion date.			
6.4	The Project Engineer shall review the submissions by the Concessionaire as per Schedule 1 of the Concession Agreement and assist Uttar Pradesh Jal Nigam in assessing the effectiveness them.	Yes	Yes	Yes
6.5	The Project Engineer shall review the monthly progress report furnished by the Concessionaire and send its comments thereon to the / Uttar Pradesh Jal Nigam and the Concessionaire within 7 (seven) days of receipt of such report.	Yes	Yes	Yes
6.6	The Project Engineer shall inspect the Construction Works and the Project as and when necessary and submit a report of such inspection (the "Inspection Report"), preferably after receipt of the monthly progress report from the Concessionaire, but before the 20th (twentieth) day of each month in any case. The report shall contain, an overview of the status, progress, quality and safety of construction, including the work methodology adopted,	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	the materials used and their sources, and conformity of Construction Works with the Scope of the Project and the Specifications and Standards. In a separate section of the Inspection Report, the Project Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in the construction of the Project. The Project Engineer shall send a copy of its Inspection Report to the / Uttar Pradesh Jal Nigam and the Concessionaire within 3 (three) days of the inspection.			
6.7	However serious lapses, defects and/or deficiencies shall be reported to the Uttar Pradesh Jal Nigam/NMCG immediately without waiting for the monthly progress submissions as mentioned in the previous paragraph.	Yes	Yes	Yes
6.8	For determining that the Construction Works conform to Specifications and Standards, the Project Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests on a sample basis, to be specified by the Project Engineer in accordance with approved norms/Good Industry Practice for quality assurance. The Project Engineer shall issue necessary directions to the	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Concessionaire for ensuring that the tests are conducted in a fair and efficient manner and shall monitor and review the results thereof.			
6.9	The timing of tests referred to in Paragraph 6.8, and the criteria for acceptance/ rejection of their results shall be determined by the Project Engineer in accordance with the norms /rules and Good Industry Practice. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Concessionaire for its own quality assurance in accordance with Good Industry Practice.	Yes	Yes	Yes
6.10	In the event that the Concessionaire carries out any remedial works for removal or rectification of any defects or deficiencies, the Project Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests to determine that such remedial works have brought the Construction Works into conformity with the Specifications and Standards, and the provisions of this Paragraph 5 shall apply to such tests.	Yes	Yes	Yes
6.11	In the event that the Concessionaire fails to	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	achieve any of the Project Milestones, the Project Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Project Engineer identifies that completion of the Project is not feasible within the time specified in the Concession Agreement, it shall require the Concessionaire to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which COD shall be achieved. Upon receipt of a report from the Concessionaire, the Project Engineer shall review the same and send its comments to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire forthwith.			
6.12	If at any time during the Construction Period, the Project Engineer determines that the Concessionaire has not made adequate arrangements for the safety of workers and common public in the zone of construction or that any work is being carried out in a manner that threatens the safety of the workers and the common public, it shall make a recommendation to the NMCG/ Uttar Pradesh Jal Nigam forthwith, identifying the whole or part of the	NA	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Construction Works that should be suspended for ensuring safety in respect thereof.			
6.13	In the event that the Concessionaire carries out any remedial measures to secure the safety of suspended works and common public, it may, by notice in writing, require the Project Engineer to inspect such works, and within 3 (three) days of receiving such notice, the Project Engineer shall inspect the suspended works and make a report to the NMCG/ Uttar Pradesh Jal Nigam forthwith, recommending whether or not such suspension may be revoked by the NMCG/ Uttar Pradesh Jal Nigam.	NA	NA	NA
6.14	If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Project Engineer shall determine the extension of dates set forth in the project completion	NA	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	schedule, to which the Concessionaire is reasonably entitled, and shall notify the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire of the same.			
6.15	Upon reference from the NMCG/ Uttar Pradesh Jal Nigam, the Project Engineer shall make a fair and reasonable assessment of the costs of providing information, works and services and certify the reasonableness of such costs for payment by the NMCG/ Uttar Pradesh Jal Nigam to the Concessionaire.	NA	NA	NA
6.16	The Project Engineer shall aid and advise the Concessionaire in preparing the Operation & Maintenance Manual.	NA	Yes	Yes
6.17	Upon reference from the NMCG/ Uttar Pradesh Jal Nigam the Project Engineer shall undertake the assessment of cost of civil works, as per applicable schedule of rates, for the reduction of Scope of work if any as per Article 21.	Yes	Yes	Yes
6.18	The Project Engineer shall review the construction progress as per payment milestones proposed by the concessionaire and provide necessary recommendation/s to Uttar Pradesh Jal Nigam for issuance of 'Milestone Construction Certificates'.	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
6.19	The Project Engineer shall support the employer in ensuring that the provisions specified in Clause 8, of the Concession Agreement including those for liquidated damages and Bonus, are being complied with.	Yes	Yes	Yes
6.20	On completion of construction and at behest of Employer, the Project Engineer may review the work done as per 'as built' drawings and identify defects and suggest changes as per clause 8.14(a)of the Concession Agreement.	Yes	NA	NA
6.21	Similarly, the Project Engineer may inspect the trial process and may point out the defects and cause changes or retrial of the process as per clause 8.15(d) of the Concession Agreement	Yes	Yes	Yes
6.22	Project Engineer shall ensure that the Concessionaire shall meet the Guaranteed Interim Availability of the existing Allahabad STPs and associated infrastructure within 30 days from the Effective Date of the Concession Agreement.	Yes	NA	NA
6.23	Project Engineer shall also ensure that the STP by-products and Treated Effluents discharged from the Existing Facilities meet the relevant Discharge Standards in accordance with the Clause 9.12(c) of the Concession	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Agreement, from 1 year from the Effective Date			
6.24	Project Engineer shall ensure that the Concessionaire shall meet the Guaranteed Interim Availability of the existing Allahabad STP and associated infrastructure within 30 days from the Effective Date of the Concession Agreement.	Yes	NA	NA
6.25	Project Engineer shall also ensure that the STP by-products and Treated Effluents discharged from the Existing Facilities meet the relevant Discharge Standards in accordance with the Clause 9.12(c) of the Concession Agreement, from 1 year from the Effective Date.	Yes	Yes	Yes
7.1	In respect of the Designs, Drawings, and Documents received by the Project Engineer for its review and comments during the Operation Period, the provisions of Paragraph 4 shall apply, mutatis mutandis.	Yes	Yes	Yes
7.2	The Project Engineer shall review the O&M Manual (Clause 9.2) and the Scheduled Maintenance Programme submitted by the concessionaire and provides its recommendations on the same, including suggestions for change, if any. The O&M Manual shall cover: a) O&M Procedures; b) O&M Plan;	NA	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	c) Provision of Spare Parts; d) Sampling and Testing Methodologies; e) Storage and control of Inventory; f) Arrangements for data security and Integrity; g) Procedures for recording and disposal of complaints; h) Operational Contingencies Plans; i) Human Resources Plans; j) EHS Plans; k) Emergency procedures; l) Management of Assets Plans. And m) Annual Scheduled Maintenance Programme.			
7.3	The Project Engineer shall review the annual Maintenance Program furnished by the Concessionaire and send its comments thereon to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire within 10 (ten) days of receipt of the Maintenance Program.	Yes	Yes	Yes
7.4	The Project Engineer shall review the reports generated from online monitoring systems to assess adherence to KPIs and submit the monthly KPI Adherence Report to Uttar Pradesh Jal Nigam	Yes	Yes	Yes
7.5	The Project Engineer shall verify the daily reports	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	submitted by the concessionaire regarding the volume of sewage and its quality re influent standards and monitor and record the same on regular basis;			
7.6	The Project Engineer shall monitor, review and advise the Uttar Pradesh Jal Nigam on the reports submitted by the concessionaire as per clause 9.8(b)(iii) (A) to (G) of the Concession Agreement.	Yes	Yes	Yes
7.7	The Project Engineer shall regularly verify the report submitted by the concessionaire on the tests conducted at the Inlet Point, the Outlet Point or at any other point at the Facilities for the Digested Sludge. Separately, the Project Engineer shall also have the right to take random samples of the incoming Sewage, the Digested Sludge and the Treated Effluent at any time during the O&M Period to test compliance with the Influent Standards and the Discharge Standards.	Yes	Yes	Yes
7.8	The Project Engineer shall review the monthly status report furnished by the Concessionaire (as required under clause 9.8(b)(iii)(E) the Concession Agreement) and send its comments thereon to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	within 7 (seven) days of receipt of such report			
7.9	The Project Engineer shall inspect the Project once every month, preferably after receipt of the monthly status report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out an O&M Inspection Report setting forth an overview of the status, quality and safety of O&M including its conformity with the Maintenance Requirements and Safety Requirements. In a separate section of the O&M Inspection Report, the Project Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in O&M of the Project. The Project Engineer shall send a copy of its O&M Inspection Report to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire within 7 (seven) days of the inspection.	Yes	Yes	Yes
7.10	The Project Engineer may inspect the project more than once in a month, if any lapses, defects or deficiencies require such inspections.	Yes	Yes	Yes
7.11	The Project Engineer shall in its O&M Inspection Report specify the tests, if any, that the Concessionaire shall carry out, or cause to be carried out,	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	for the purpose of determining that the project is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Concessionaire in this behalf.			
7.12	The Project Engineer shall determine if any delay has occurred in completion of repair or remedial works in accordance with the Concession Agreement, and shall also determine the Damages, if any, payable by the Concessionaire to the NMCG/ Uttar Pradesh Jal Nigam for such delay.	Yes	Yes	Yes
7.13	The Project Engineer shall monitor and review the curing of defects and deficiencies by the Concessionaire.	Yes	Yes	Yes
7.14	In the event that the Concessionaire notifies the Project Engineer of any modifications that it proposes to make to the project, the Project Engineer shall review the same and send its comments to the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire within 15 (fifteen) days of receiving the proposal.	NA	NA	NA
7.15	The Project Engineer shall undertake sewage flow sampling, as and when required by the NMCG/ Uttar	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	Pradesh Jal Nigam, under and in accordance with the provisions of this agreement.			
7.16	The Project Engineer shall review and report to the employer on all the reports (Daily, Monthly, Quarterly and Annual), including monthly Environmental Monitoring Reports as detailed in Schedule 10(Part G) of the Concession Agreement.	Yes	Yes	Yes
7.17	The Project Engineer shall provide necessary training/capacity building to the operators/technicians of the STP, as and when required, so as to address the gap in skill sets of the manpower deployed by the Concessionaire.	Yes	Yes	Yes
7.18	The Project Engineer will provide necessary assistance to NMCG and UP Jal Nigam for the understanding various projects undertaken through other Central Government/State Government schemes /Urban Local Bodies and advice NMCG/UP Jal Nigam accordingly so that the overall objective preventing flow of untreated sewage into the river Yamuna is accomplished. The support by the proposed PE will include, but not limited to the following: 7.18.1 Preparation of a road map/policy note for	NA	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st March 2023 to 31st March 2023**		
		Undertaken till previous months	**Undertaken during this month**	**Expected for next month**
	completion of sewage related work at the City Level taking into consideration various schemes implemented through NMCG/Central/State Government funding and/or through Urban Local Body funding; 7.18.2 Assist in developing dovetailing partnerships with other schemes in the sewage sector like AMRUT, SMART City Mission and Swachh Bharat Mission to develop Synergistic plans. 7.18.3 Assist in identification of suitable new technologies for improving sewage infrastructure, economizing investment and for sustainable development and operation of the project; 7.18.4 Collecting information on regular monitoring and of implementation of various projects by the project implementing agencies/Urban Local Bodies and to produce status report;			
7.19	Assist in identification of bottlenecks in implementation of projects and suggesting remedial actions.	Yes	Yes	Yes

ANNEXURE-V

QUALITY CONTROL / QUALITY ASSURANCE

S.NO	Description	Instrument	1st March 2023 to 31st March 2023				Remarks
			As per IS no of test required	No of test conducted	No of test accepted	No of test rejected	
1	Aggregate Impact Value	IS 2386-Part 4	ONE TEST/300 CUM	1	1	0	Aggregate Impact value test conduct in Jhunsi. found satisfactory
2	Aggregate Impact Value	IS 2386-Part 4	ONE TEST/300 CUM	1	1	0	Aggregate Impact value test conduct in Jhunsi. found satisfactory
3	Sand gradation	IS 2386-Part 1	ONE TEST/300CUM	1	1	0	Sand Gradation Test conduct in, Jhunsi and found satisfactory
4	Sand gradation	IS 2386-Part 1	ONE TEST/300CUM	1	1	0	Sand Gradation Test conduct in, , Jhunsi and found satisfactory
5	Cube test	IS 516-2001	Quantity of concrete (m3)Number of samples 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4 plus one additional sample for	04	04	0	Jhunsi SPS cube test at Jhunsi site. Cube test is acceptable for 7 Days

S.NO	Description	Instrument	1st March 2023 to 31st March 2023				Remarks
			As per IS no of test required	No of test conducted	No of test accepted	No of test rejected	
			each additional 50 m3 or part thereof.				
6	Cube test	IS 516-2001	Quantity of concrete (m3) Number of samples 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4 plus one additional sample	06	06	0	Jhunsi SPS cube test at Jhunsi site . Cube test is acceptable for 28 Days.

S.NO	Description	Instrument	1st March 2023 to 31st March 2023				Remarks
			As per IS no of test required	No of test conducted	No of test accepted	No of test rejected	
7	Cube test (Manhole)	IS 516-2001	Quantity of concrete (m3) Number of samples 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4 plus one additional sample	00	00	0	NIL
8	Cube test (Manhole)	IS 516-2001	Quantity of concrete (m3) Number of samples 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4 plus one additional sample	00	00	0	NIL

S.NO	Description	Instrument	1st March 2023 to 31st March 2023				Remarks
			As per IS no of test required	No of test conducted	No of test accepted	No of test rejected	
9	Silt Content in Sand	IS 2386: 1963-Part 2	50 M3 – 1 TEST	1	1	0	Silt Content Test conduct in Jhunsi and found satisfactory
10	Silt Content in Sand	IS 2386: 1963-Part 2	50 M3 – 1 TEST	1	1	0	Silt Content Test conduct in, Jhunsi, and found satisfactory
11	Sieve analysis (Aggregate 10mm)	IS 2386	ONE TEST/300 M3	1	1	0	Sieve Test Activity conduct in , Jhunsi site as per quality of material found acceptable
12	Sieve analysis (Aggregate 20mm)	IS 2386	ONE TEST/300 M3	1	1	0	Sieve Test Activity conduct in Jhunsi, site as per quality of material found acceptable
13	Brick Test	IS 1077 & 3495	1 SAMPLE/50 000 BRICKS	1	1	0	As per site brick test activity conduct at Junsi(Phaphamau bricks) and result found acceptable as per IS
SS14	OPC CEMENT 43 GRADE	IS 4031	I TEST PER LOT	1	1	0	Ultratech (Third party batch report Submitted)