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
April 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.

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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;**

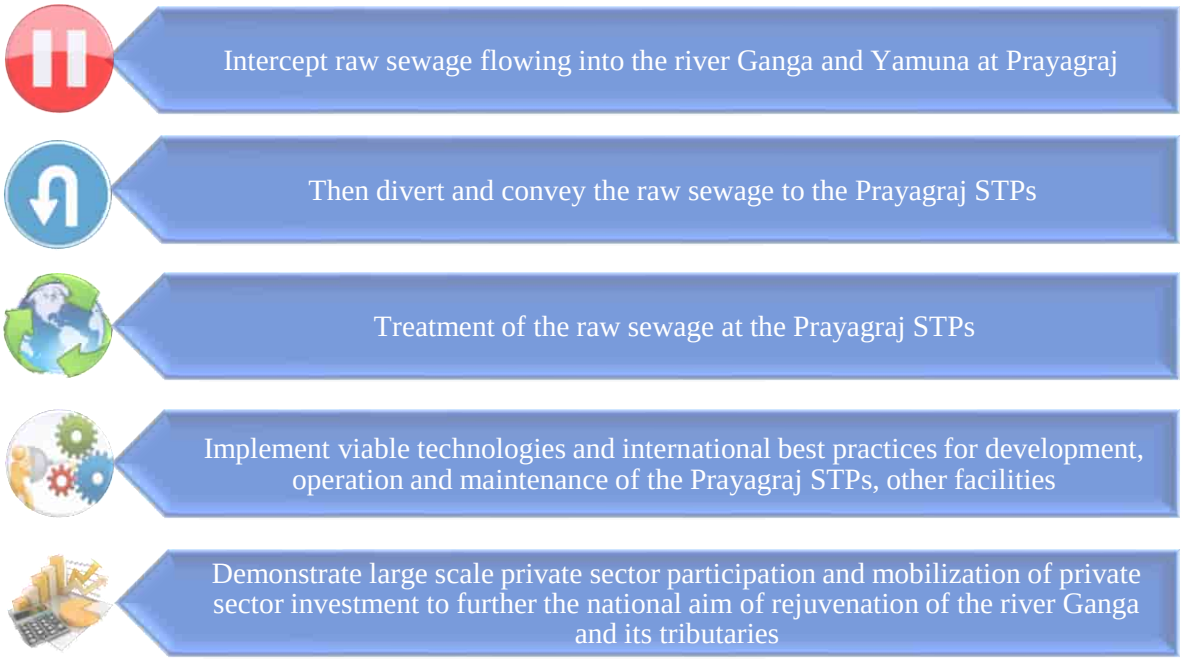


Figure 1 : Objectives of NMCG and UP JAL NIGAM

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

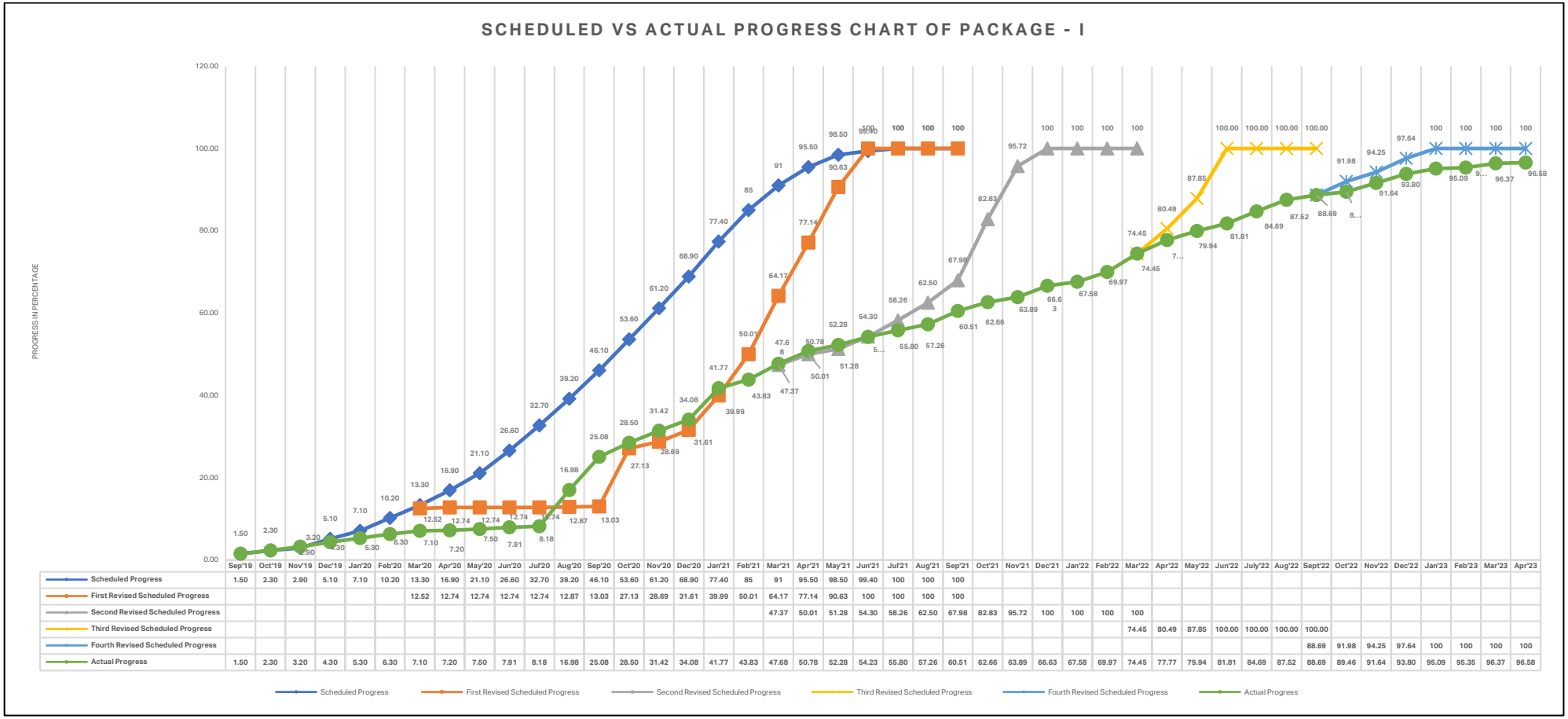
Package Number - I				
Nature of work	**Facilities**			
New construction	Design, develop, finance, construct, operate and maintain, and transfer the Package-I Facilities including three STP facilities with a proposed capacity of 42 MLD at Naini (District G), 14 MLD at Phaphamau (District F), and 16 MLD 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



	Sep'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20	Apr'20	May'20	Jun'20	Jul'20	Aug'20	Sep'20	Oct'20	Nov'20	Dec'20	Jan'21	Feb'21	Mar'21	Apr'21	May'21	Jun'21	Jul'21	Aug'21	Sep'21	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Apr'22	May'22	Jun'22	July'22	Aug'22	Sept'22	Oct'22	Nov'22	Dec'22	Jan'23	Feb'23	Mar'23	Apr'23
Scheduled Progress	1.50	2.30	2.90	5.10	7.10	10.20	13.30	16.90	21.10	26.60	32.70	39.20	46.10	53.60	61.20	68.90	77.40	85	91	95.50	98.50	99.40	100	100	100																		
First Revised Scheduled Progress							12.52	12.74	12.74	12.74	12.74	12.87	13.03	27.13	28.69	31.61	39.99	50.01	64.17	77.14	90.63	100	100	100	100																				
Second Revised Scheduled Progress																			47.37	50.01	51.28	54.30	58.26	62.50	67.98	82.83	95.72	100	100	100	100														
Third Revised Scheduled Progress																															74.45	80.49	87.85	100.00	100.00	100.00	100.00							
Fourth Revised Scheduled Progress																																					88.69	91.98	94.25	97.64	100	100	100	100
Actual Progress	1.50	2.30	3.20	4.30	5.30	6.30	7.10	7.20	7.50	7.91	8.18	16.98	25.08	28.50	31.42	34.08	41.77	43.83	47.68	50.78	52.28	54.23	55.80	57.26	60.51	62.66	63.89	66.63	67.58	69.97	74.45	77.77	79.94	81.81	84.69	87.52	88.69	89.46	91.64	93.80	95.09	95.35	96.37	96.58

- **Project Engineer has provided observation on Concessionaire April'23-month MPR vide letter number AIPL/NMCG/PRAYAG/1605 on dated 17.05.2023 Therefore, status may be change after observation incorporated by Concessionaire.**

7.1.7 Physical construction Activities in April'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 Mithakhall 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:

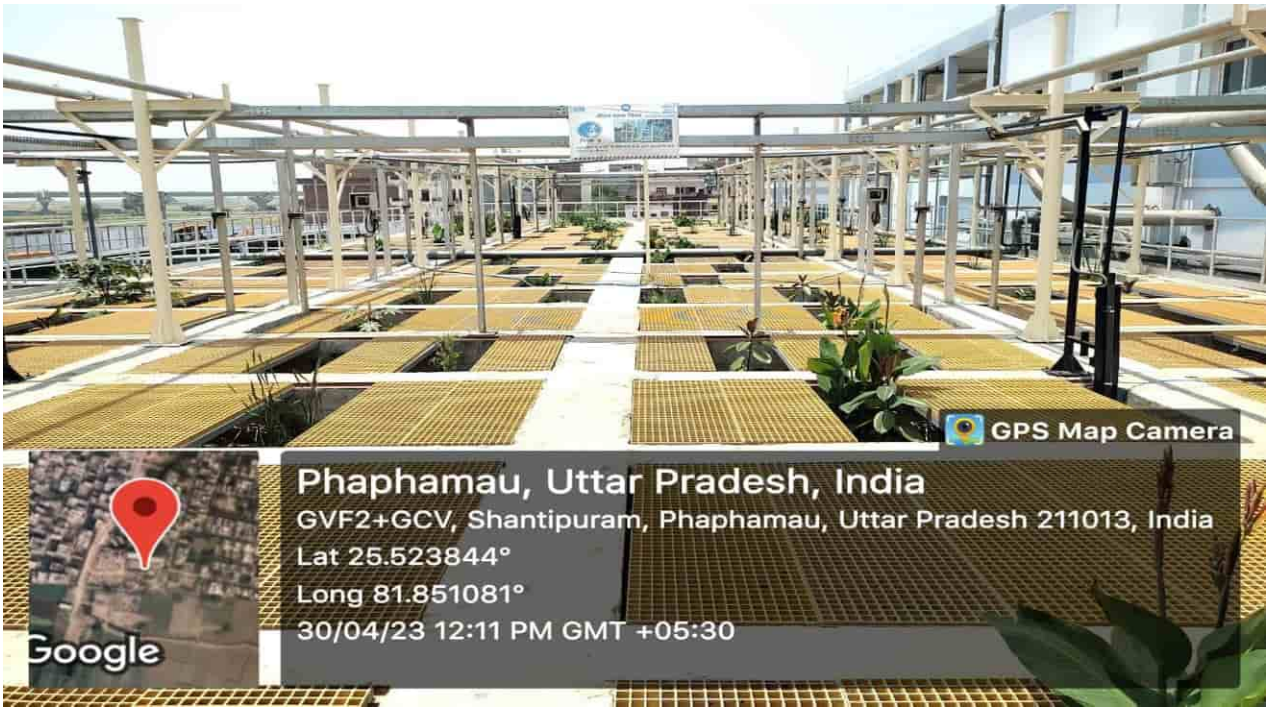
Regular progress review meetings are being held at UPJN office & sites. Following meetings were held during the month of April 2023.

Sr. No.	Site Visit & Meeting with UPJN / NMCG / PWPL	Date	Attendees	Description
1.	Site inspection of Naini-II STP	1-Apr-24	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	3-Apr-24	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-Apr-24	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-Apr-24	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
5.	Site inspection of Jhunsi STP	20-Apr-24	Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities of plant
6.	Site inspection of Naini-II STP	24-Apr-24	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-Apr-24	Mr. Gaurav Pandey Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities of plant
8.	Meeting With NMCG Officials (ED Technical)	26-Apr-24	Mr. Gaurav Gupta Mr. Gaurav Pandey Mr. Sudhir Tomar Mr. Alok Ranjan	Progress review meetings for HAM Project (Package-I, II and III)
9.	Site inspection of Phaphamau STP	27-Apr-24	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
10.	Site inspection of Jhunsi STP	27-Apr-24	Mr. Gaurav Gupta Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities of plant

10. Photos of Meetings / Site Visits and Activities

PACKAGE - I

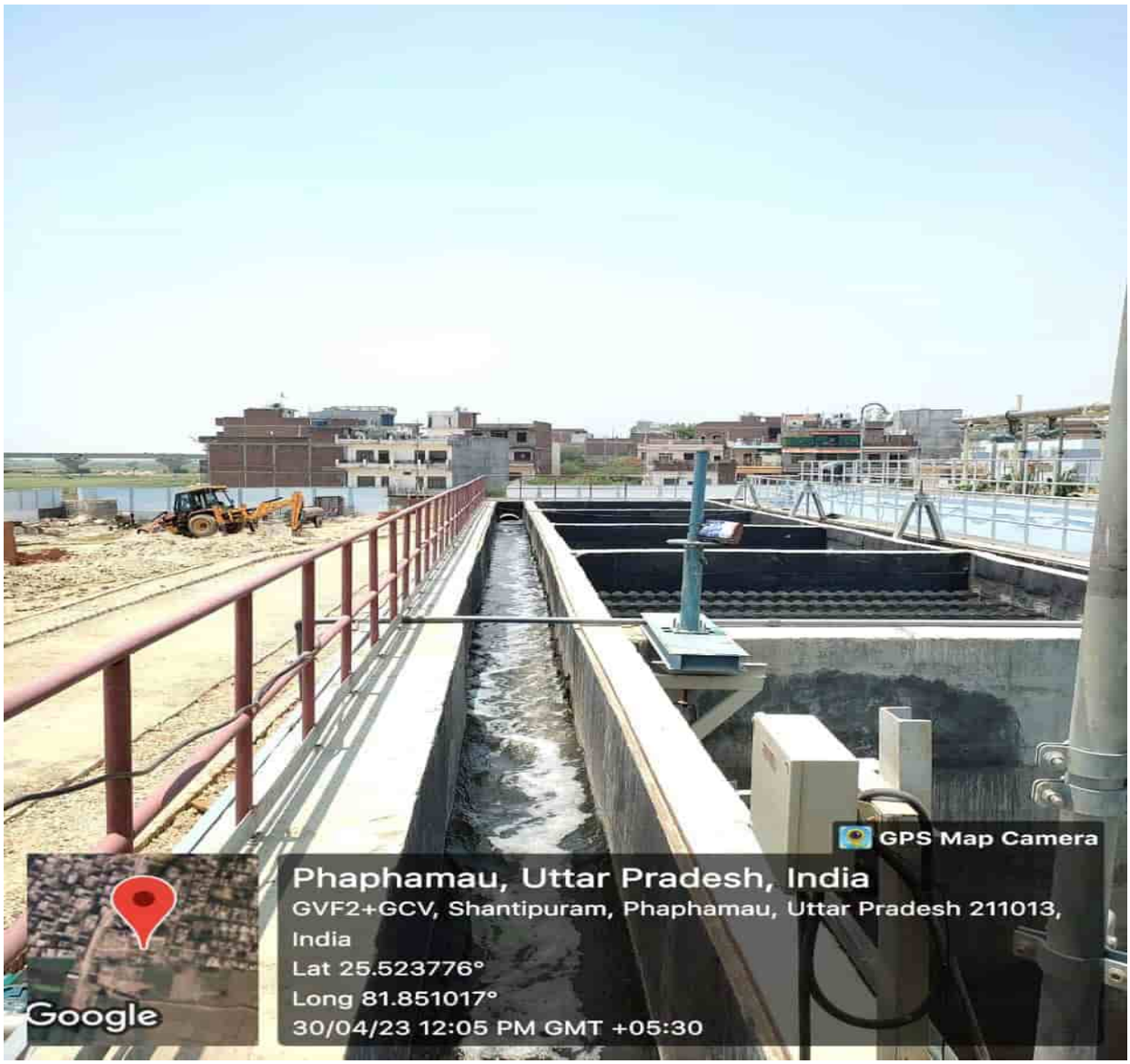
PHAPHAMAU FACILITY



FCR: Finishing work in progress

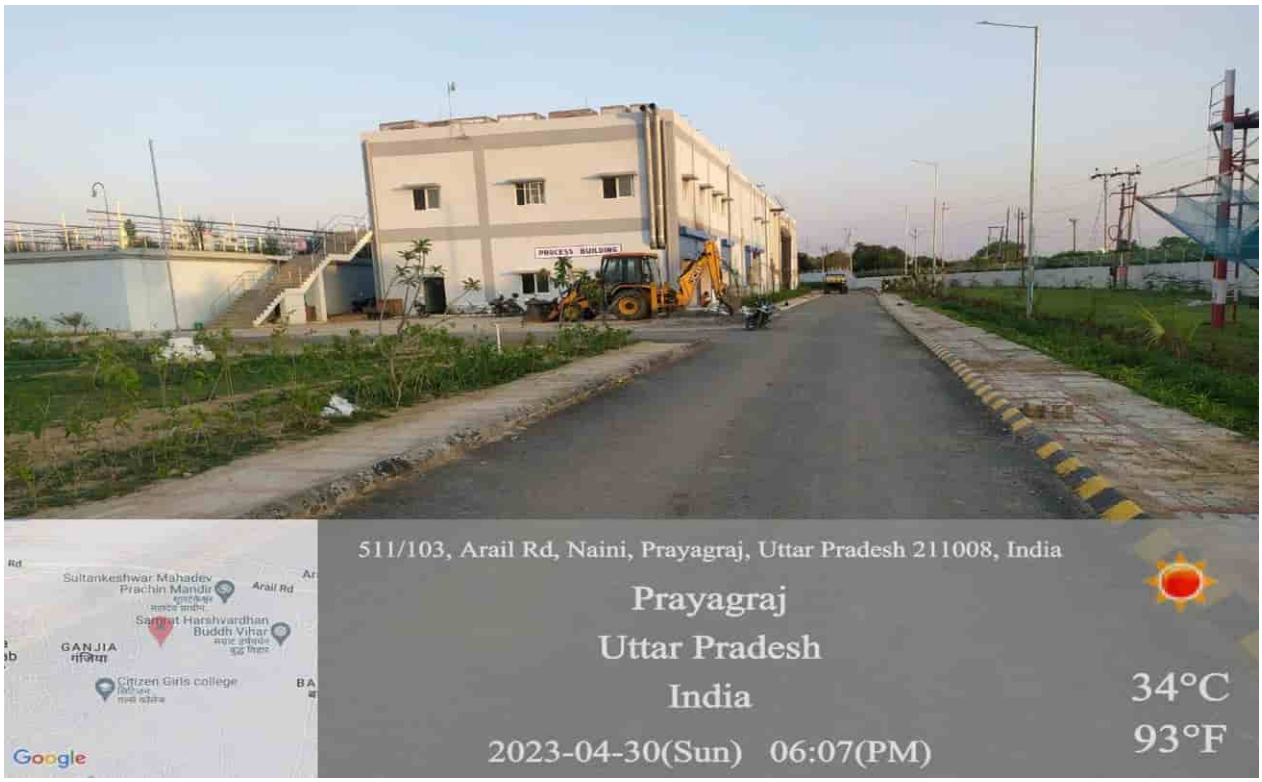
Phaphamau STP – Road and Painting work in progress

PHAPHAMAU FACILITY

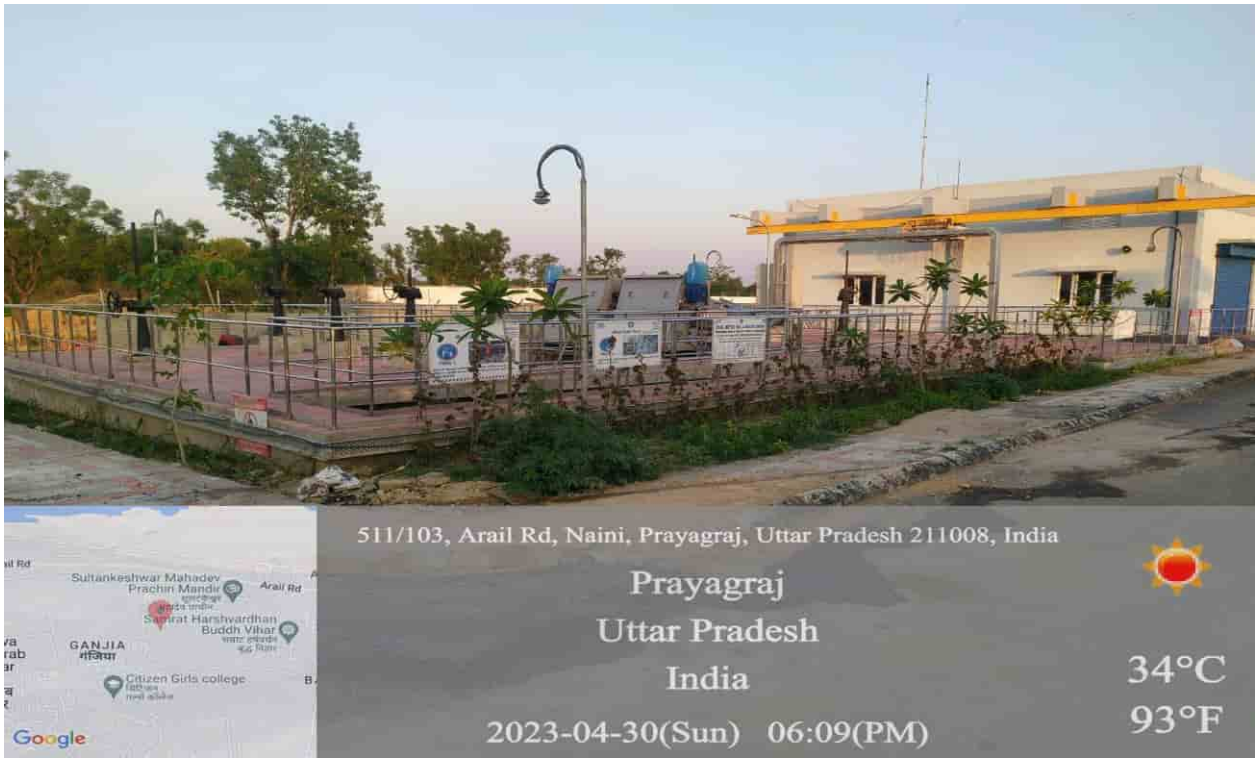


STP campus: Area development and Painting work is in progress

NAINI-II FACILITY

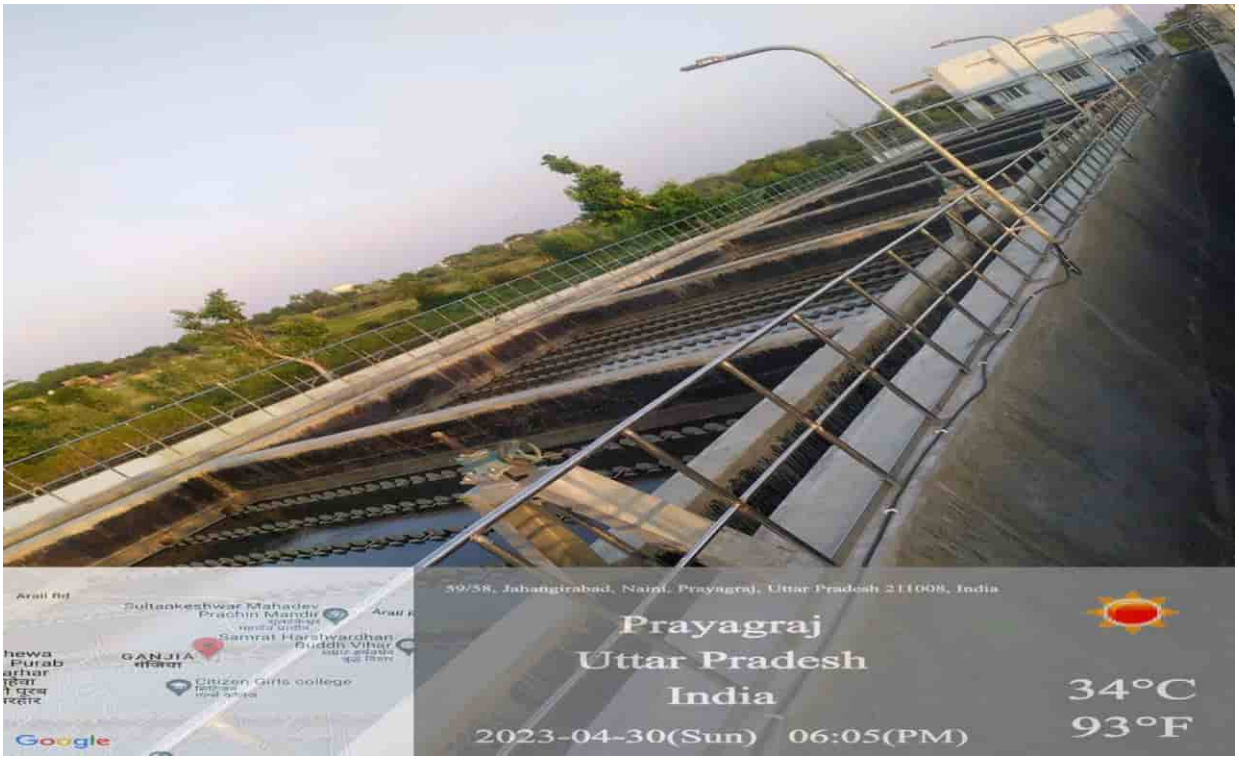


Naini-II (STP Campus)– Road and area development work is in progress



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

NAINI-II FACILITY



Tube settler – Painting work is in progress

Naini – II STP Campus - Boundary wall and concertina wire work is in progress

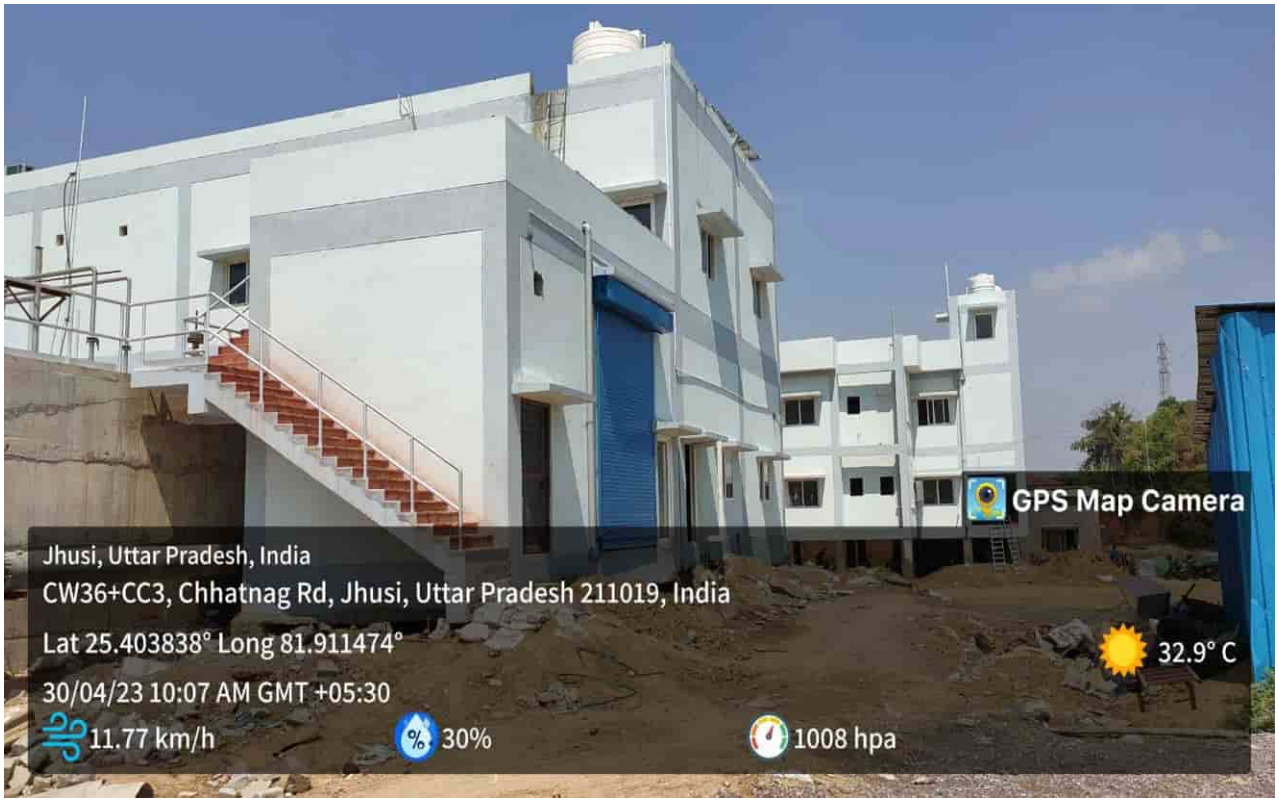
JHUNSI FACILITY

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

Jhunsi STP– E&M work under progress

JHUNSI FACILITY

FCR – Finishing & 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/1592	Observation of O & M Monthly Progress report for the month of February, 2023 of Package – III	5-Apr-23	S.E.-2 Circle - UPJN
2.	AIPL/NMCG/PRAYAG/1593	Regarding Observation of Technical Observation of five drain for Mahewa Passi tola	12-Apr-23	S.E.-2 Circle - UPJN
3.	AIPL/NMCG/PRAYAG/1594	Observation of drawings for Road & Drain at Jhunsi STP	18-Apr-23	S.E.-2 Circle - UPJN
4.	AIPL/NMCG/PRAYAG/1595	Regarding the Observation of MPR of Mar'23	19-Apr-23	Prayagraj water private limited
5.	AIPL/NMCG/PRAYAG/1596	Observation of O & M Monthly Progress report for the month of March, 2023 of Package – III	19-Apr-23	S.E.-2 Circle - UPJN
6.	AIPL/NMCG/PRAYAG/1597	Inspection Reports of Package-II Facilities	28-Apr-23	S.E.-2 Circle - UPJN
7.	AIPL/NMCG/PRAYAG/1598	Inspection Reports of Package-III facilities	28-Apr-23	S.E.-2 Circle - UPJN
8.	AIPL/NMCG/PRAYAG/1599	Observation of Expenditure incurred for the replacement of sewage gravity pipeline at Ponghat	28-Apr-23	S.E.-2 Circle - UPJN
9.	AIPL/NMCG/PRAYAG/1600	Inspection reports of Package-I facilities	28-Apr-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.	46/PWPL/(PRAYAGRAJ)/18	Regarding O&M Payment of 7th Quarter of Package-II	4-Apr-23	PM-1, UPJN
2.	PWPL/UPJN/PRAYAGRAJ/SITE /899	Regarding claim for Setup for battery Bank for Solar Power Plant of Pkg-I STP's in lieu of Change in Law.	5-Apr-23	Prayagraj water private limited
3.	PWPL/UPJN/PRAYAGRAJ/SITE /901	Regarding the submission of MPR of Mar'23	7-Apr-23	Prayagraj water private limited
4.	PWPL/UPJN/PRAYAGRAJ/SITE /901	Proposal for initiating Trial Operations of Jhunsi STP operation and grant of COD of Package-I.	11-Apr-23	Prayagraj water private limited
5.	241/PWPL/(PRAYAGRAJ)/55	Regarding Trial and Run certification of Naini-II and Phaphamau Facility Under PKG-I	11-Apr-23	PM-1, UPJN
6.	249/PWPL/(PRAYAGRAJ)/58	Regarding progress of construction works of 42 MLD Naini-2 and 14 MLD Phaphamau STPs and their related structures.	13-Apr-23	PM-1, UPJN
7.	247/PWPL/(PRAYAGRAJ)/56	Regarding progress of construction works of 16 MLD Jhunsi STP and Shastri Bridge SPS.	13-Apr-23	PM-1, UPJN
8.	PWPL/UPJN/PRAYAGRAJ/O&M/611	Reg additional Pipe installation for Effluent Outlet at Naini I STP	15-Apr-23	PM-1, UPJN

Sr. No.	PWPL / UPJN Transmittal reference number	Description	Date	From
9.	PWPL/UPJN/PRAYAGRAJ/O&M/587	Replacement of Rising main of Ghagharnala damaged due to illegal houses Construction & Ponghat inlet gravity line.	15-Apr-23	PM-1, UPJN
10.	250/PWPL/(PRAYAGRAJ)/59	Regarding Jhunsi Variation Claim under Package-I	15-Apr-23	PM-1, UPJN
11.	PWPL/UPJN/PRAYAGRAJ/SITE /902	Regarding initiation of Trial Operations of Jhunsi STP Facility.	17-Apr-23	Prayagraj water private limited
12.	PWPL/UPJN/PRAYAGRAJ/SITE /903	Regarding issuance of COD for Naini-II & Phaphamau Facility under Package-I	21-Apr-23	Prayagraj water private limited
13.	PWPL/UPJN/PRAYAGRAJ/SITE /904	Regarding Jhunsi Variation Claim Prayagraj under Package-I.	27-Apr-23	Prayagraj water private limited
14.	288/PWPL/(PRAYAGRAJ)/61	Regarding Jhunsi Variation Claim Prayagarj under Package-I	28-Apr-23	PM-1, UPJN

13. EHS targets, Achievement & compliance report for the month of April 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 Power connection at Jhunsi STP is completed.
2	Consent to Establish	State Pollution	1 No.	Received

Sr. No.	Applicable Permit	Authority	Quantity	Remarks
		Control Board (SPCB)		
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	1	1	3
2.	Dumper	-	-	-	0
3.	Proclaim	-	-	-	0
4.	Ajax	-	-	1	1
5.	Hydra	-	-	1	1
6.	Roller	-	-	-	0
7.	Submersible Pump 2HP	-	-	-	0
8.	Diesel Pump 5 HP	-	-	-	0
9.	5KV generator	-	-	1	1
10.	Total Station	-	-	1	1
11.	Water tanker	-	-	2	2
12.	Auto level	-	-	1	1
13.	Mixing machine	-	-	4	4
14.	Vibrator	3	-	8	11
15.	Tractor	1	-	1	2
16.	Concrete Chipping Machine	1	-	2	3
17.	Welding Machine	1	-	4	5
18.	Grinding Machine	1	1	5	7
19.	Gas cutting set	-	-	2	2
20.	Chain saw machine	-	-	-	-
21.	Chain Block	-	-	1	1
22.	RM 800	-	-	-	0
23.	Plywood cutting machine	-	-	6	6
24.	Steel cutting machine	-	-	5	5

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 AND KPI REPORT FOR PACKAGE-I

Table of Contents

1. JHUNSI STP AND ASSOCIATE INFRASTRUCTURE

1.1 Action taken Report

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
Civil Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
1	At Shastri Bridge SPS, progress of civil construction works is very slow. As per 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.	Casting for all 19 lifts of SPS are completed. Currently, shuttering work in in progress for slab casting at 89.0m level then construction of superstructure is pending.	Casting upto slab 89.0m is completed and currently column shuttering work is under progress.
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.	Shuttering work for slab of 2nd floor is in progress. Still progress is very slow.	2nd floor slab is casted and brick work is under progress.
3	At Shastri Bridge SPS, construction of boundary wall and approach road is pending.	Not started yet	Boundary wall can not be constructed as per the site condition, approach road work is under progress.
4	At all 13 Interception and diversion points, arrangement for conveying sewage from existing nalla to the civil structure is pending.	Not started yet	Work is under progress.
5	At all 13 Interception and diversion points, repairing work of civil structure which is damaged due to flood is pending.	Repairing work for 4 out of 13 I&Ds is completed till date.	Repairing work for 4 out of 13 I&Ds is completed and balance work is under progress.
6	At Jhunsi MPS, epoxy coating in wet well is pending.	Not started yet	We have used the SRC cement during the construction so epoxy coating on structure is not required.

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
Civil Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
7	At Jhunsi MPS, screeding work for floor in open channels of screen is pending.	Completed	Completed
8	At Jhunsi MPS, installation of door & windows, finishing works are pending.	Installation of doors and windows is completed whereas finishing work is in progress	Installation of doors and windows is completed whereas finishing work is in progress
9	At Jhunsi MPS, landscaping and site development work is pending.	Work is in progress	Work is hold on account of Change of scope approval.
10	At Jhunsi MPS, installation of permanent type display/sign boards is pending.	Not started yet	Work is in progress
11	At Jhunsi MPS, permanent arrangement for water supply is pending.	Not started yet	Work is under progress
12	At Jhunsi MPS, land filling work is pending	Work is in progress	Work is in progress
13	At Jhunsi MPS, construction of loading and unloading bay is pending.	As informed by Concessionaire, it will be started after land filling work	Work is hold on account of Change of scope approval.
14	At Jhunsi STP, rectification for discrepancy regarding outlet launder of tube settlers is pending.	For 2 out of 4 tube settlers, it is completed and for remaining 2 it is in progress	For 02 Nos. out of 04 Nos. tube settlers, it is completed and for remaining 02 it is in progress
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.	Not started yet	Painting work in FCR is already completed.

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
Civil Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
16	At Jhunsi STP, construction of boundary wall is pending.	Not started yet	Work will be initiated after the approval of Change of scope.
17	At Jhunsi STP, land filling work is pending.	Work is in progress	Work will be completed after the approval of Change of scope.
18	At Jhunsi STP, construction works for Road & Drain are pending.	As informed by Concessionaire, it will be started after land filling work	Work will be initiated after the approval of Change of scope.
19	At Jhunsi STP, fixing of hand railing for some parts of STP are pending.	Completed except for staff quarter of Shastri B SPS.	The handrailing work is completed for all structures except Staff Quarter of Shastri B SPS.
20	At Jhunsi STP, landscaping and development work for complete site is pending.	As informed by Concessionaire, it will be started after land filling work	It will be started after completion of earth filling which comes under Change of scope
21	At Jhunsi STP, finishing works for various units of STP are pending.	Work is in progress	Work is in progress
22	At Jhunsi STP, water proofing over the roof for all units is pending.	Work is in progress and 50 % work is completed till date	80% water proofing over roofs is completed except Shastri Bridge staff quarter. Balance water proofing work is under progress.
23	At Jhunsi STP, laying of effluent pipeline is pending.	Work is in progress for last stretch near river.	Completed
24	At Jhunsi STP, construction of brick wall for providing partition in SDU room is pending.	Completed	Completed

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
Civil Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
25	At Jhunsi STP, epoxy coating in all water retaining structures is pending.	Completed	We have used the SRC cement during the construction so epoxy coating on structure is not required.
26	At Jhunsi STP, arrangements for rainwater harvesting are pending.	Not started yet	As the ground water table is already high so in this condition rain water harvesting is not required.
27	At Jhunsi STP, painting work for some civil structures is pending.	Work is in progress	Work is in progress
28	At Jhunsi STP, construction of supports for pipeline from MPS to PTU and PTU to CCT is pending	Work is in progress	Completed
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.	Not started yet	Work will be initiated after the approval of Change of scope.
		Status of Gravity Main and Rising Main:	
30	70 m gravity main laying of 200 mm dia and 142.5 m of 900 mm dia is pending.		900 mm dia outfall line is completed. While the work of 70 m gravity laying of 200 mm dia is under progress.
31	Flow test of gravity main is pending from Augharwa Nalla to Shastri bridge SPS.		Work is under progress.
32	150 meter rising main laying of 700 mm dia is pending.		Laying will be initiated after approval of laying the line with trenchless method.

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
Civil Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
33	Hydro test of rising main is pending for approx. 1800 meter.		Completed
34	Construction of 3 manholes from Augharwa Nalla to Shastri Bridge SPS are pending.		02 No. manhole completed, and balance 01 Nos manhole work is under progress.

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
1	At Shastri Bridge SPS, all E&M works are pending as civil works are not completed yet.	Not Started yet	E&M work has been initiated already and going parrel to civil work.
2	At all 13 Interception and diversion points, all E&M works are pending.	Not Started yet	Work is under progress
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.	Not Started yet	Will be taken care during the course of O&M.
4	At Jhunsi MPS, testing & commissioning of submersible pumps is pending.	Testing is completed from temporary raw sewage connection from two I&D's.	Completed.
5	At Jhunsi MPS, testing & commissioning of mechanical screens is pending.	Testing is completed from temporary raw sewage connection from two I&D's.	Completed

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
6	At Jhunsi MPS, installation of chute for screw conveyor of mechanical screens is pending.	Work is in progress	Work is in progress
7	At Jhunsi MPS, installation of sluice gate in partition wall in downstream side of screens is pending.	Gate installation is completed but construction of operating platform is pending.	Completed
8	At Jhunsi MPS, installation of penstocks and spindles for all gates is pending.	Work is completed except for bracket supports for spindle.	Completed
9	At Jhunsi MPS, installation of pressure gauges in discharge lines of all pumps is pending.	Not Started yet	Completed
10	At Jhunsi MPS, installation of pressure transmitter in header line of pumps is pending.	Not Started yet	Work is under progress
11	At Jhunsi MPS, installation of differential level transmitter for mechanical screen is pending.	Installation is completed but power connection, calibration is pending.	Completed
12	At Jhunsi MPS, installation of level transmitter in raw sewage sump is pending.	Installation is completed but power connection, calibration is pending.	Completed
13	At Jhunsi MPS, installation of outlet flowmeter is completed but it is not working.	Installation is completed but power connection, calibration is pending.	Flowmeter is installed and working.
14	At Jhunsi MPS, installation of fire alarm and fire-fighting system is not started yet.	Not Started yet	Completed
15	At Jhunsi MPS, installation of CCTV system is not started yet.	Not Started yet	Completed
16	At Jhunsi MPS, work for ventilation system is pending.	Work is in progress	Completed
17	At Jhunsi MPS, installation of EOT is pending.	Completed	Completed

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
18	At Jhunsi MPS, painting for MS structures inside the facility is pending.	Work is in progress	Work is in progress
19	At Jhunsi MPS, testing & commissioning of electrical panels is pending.	Testing is completed from DG	Completed
20	At Jhunsi MPS, cable laying works for both LT, C&I are pending.	Work is in progress	Work is in progress
21	At Jhunsi MPS, power connections for all E&M equipment are pending.	Work is in progress	Completed
22	At Jhunsi MPS, leakage test for sluice gates/valves is pending.	Work is in progress	Completed
23	At Jhunsi MPS, installation of permanent lights for complete unit are pending.	Work is in progress	Completed
24	At Jhunsi STP, installation of chute for screw conveyor of mechanical screens is pending.	Work is in progress	Work is in progress
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.	Completed	Completed
26	At Jhunsi STP, installation of electrical actuators for inlet and outlet gates of manual screen are pending.	Installation of actuator for upstream side of all screens are pending	Work is under progress.
27	At Jhunsi STP, cable laying, power connections for both mechanical screens and electrical actuator are pending	Testing of 1 out of 2 mechanical screens is completed from temporary raw sewage received from 2 I&Ds.	Completed

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
28	At Jhunsi STP, testing & commissioning of grit removal system is pending. Pipeline laying for scum removal is pending.	Testing of 1 out of 2 grit removal systems is completed from temporary raw sewage received from 2 I&Ds.	Work is under progress
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.	Completed	Completed
30	At Jhunsi STP, cable laying, power connections for both grit removal units are pending.	Testing of 1 out of 2 grit removal systems is completed from temporary raw sewage received from 2 I&Ds.	Completed
31	At Jhunsi STP, pipeline laying for scum removal is pending.	Not Started yet	Work is under progress
32	At Jhunsi STP, E&M works of screw conveyor and other arrangements for grit removal units is pending	Installation is completed but power connection is pending.	Work is under progress
33	At Jhunsi STP, completion of discharge piping, testing & commissioning, cable laying, power connections and installation of LPBS of grit blowers is pending.	Installation of LPBS is pending, testing & commissioning is pending	Completed
34	At Jhunsi STP, discharge piping, cable laying, power connections, erection of air dryer, testing & commissioning of air compressor is pending.	Not Started yet	Completed

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
35	At Jhunsi STP, installation, cable laying, power connections and laying of associated pipelines of poly dosing system are pending.	Not Started yet	Work is under progress
36	At Jhunsi STP, installation of penstocks and spindles for all sluice gates in FCR is pending.	Completed	Completed
37	At Jhunsi STP, installation of dummy plate in header line of aeration blowers is pending.	Completed	Completed
38	At Jhunsi STP, testing & commissioning of aeration blowers is pending.	Testing of 2 out of 4 blowers is completed from DG excluding heat exchanger system.	Completed
39	At Jhunsi STP, installation of HMI screens and testing of VFD panels for aeration blowers is pending.	Not Started yet	Under progress.
40	At Jhunsi STP, work for cooling water line to air line from aeration blowers is pending.	Not Started yet	Under progress.
41	At Jhunsi STP, laying of all pipelines from PTU to FCR is pending and installation of flowmeters in these pipelines are pending.	Completed but construction of supports is in progress	Work is under progress.
42	At Jhunsi STP, installation of I-nuts and diffusers in FCR tanks is pending.	Completed for 2 out of 4 tanks but not started for remaining tanks.	Completed
43	At Jhunsi STP, installation of plants for FCR tanks are pending.	Not Started yet	Work is under progress
44	At Jhunsi STP, installation of bio-modules for FCR tanks are pending. Currently, the bio-modules are	Completed for 2 out of 4 tanks but not started for remaining tanks. Material	Work is under progress

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
	not available at site as they are sent to OEM's manufacturing unit for some rectification work.	for remaining 2 tanks is not available at site.	
45	At Jhunsi STP, installation of chlorination system and laying of related pipelines is pending.	Work is in progress	Work is in progress
46	At Jhunsi STP, installation of booster pumps for chlorination booster pump and laying of related pipelines is pending.	Not Started yet	Completed
47	At Jhunsi STP, electrical works related to chlorination system are pending.	Work is in progress	Work is in progress
48	At Jhunsi STP, E&M works for leak detection system and neutralization tower are pending.	Work is in progress	Completed
49	At Jhunsi STP, commissioning of sludge dewatering system is pending	Not Started yet	Only commissioning is pending
50	At Jhunsi STP, commissioning of lime dosing system is pending	Not Started yet	Only commissioning is pending
51	At Jhunsi STP, laying of overflow pipeline for sludge dewatering unit is pending.	Completed	Completed
52	At Jhunsi STP, laying of supernatant pipeline from dewatering building to MPS is pending.	Work is in progress	Completed
53	At Jhunsi STP, installation, cable laying, power connections of dewatering feed pumps are pending.	Not Started yet	Completed

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
54	At Jhunsi STP, laying of sludge pipeline from dewatering feed pumps to dewatering building is pending.	Not Started yet	Completed
55	At Jhunsi STP, installation of chimney for DG as per CPCB norms is pending.	Not Started yet	Work is under progress
56	At Jhunsi STP, construction of earthing pits is pending.	Not Started yet	Completed
57	At Jhunsi STP, cable laying work, testing & commissioning of DG sets is pending.	Completed	Completed
58	At Jhunsi STP, cable dressing, cable connection, testing & commissioning of HT panel is pending.	Work is in progress	Completed
59	At Jhunsi STP, cable dressing, cable connection, testing & commissioning of transformers is pending.	Work is in progress	Completed
60	At Jhunsi STP, cable dressing, cable connection, testing & commissioning of main MCC panel is pending.	Work is in progress	Completed
61	At Jhunsi STP, cable dressing, cable connection, testing & commissioning of APFC panels is pending.	Work is in progress	Completed
62	At Jhunsi STP, cable dressing, cable connection, testing & commissioning of DG panel is pending.	Completed	Completed
63	At Jhunsi STP, erection of spool piece in bypass line of STP is pending.	Not Started yet	Work is under progress

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
64	At Jhunsi STP, installation of differential level transmitter for mechanical screen is pending.	Not Started yet	Completed
65	At Jhunsi STP, installation of inlet and outlet analysers is pending.	Not Started yet	Completed
66	At Jhunsi STP, installation of DO analysers for FCR tanks is pending.	Not Started yet	Work is under progress
67	At Jhunsi STP, installation of chlorine analyser at the outlet of STP is pending	Not Started yet	Completed
68	At Jhunsi STP, installation of outlet flowmeter is pending.	Installation is completed but power connection is pending.	Completed
69	At Jhunsi STP, installation of various instruments related to equipment are pending.	Work is in progress	Work is in progress
70	At Jhunsi STP, installation works for solar power plant are not started yet.	Work is in progress	Completed
71	At Jhunsi STP, C&I cable laying for complete site is pending.	Work is in progress	Completed
72	At Jhunsi STP, erection & commissioning works of PLC system are pending.	Not Started yet	Work is in progress
73	At Jhunsi STP, erection & commissioning works of SCADA system are pending.	Not Started yet	Work is in progress
74	At Jhunsi STP, work for service water pipe at all points is pending.	Not Started yet	Work is in progress

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
75	At Jhunsi STP, testing & commissioning, cable laying, power connections for treated effluent pumps is pending.	Installation completed but cable laying, power connection is pending	Completed
76	At Jhunsi STP, testing & commissioning of EOTs for all units is pending.	Work is in progress	Completed
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.	Not Started yet	Work is under progress.
78	At Jhunsi STP, work for providing potable water reservoir and related pipeline is pending for all units.	Not Started yet	Work is under progress
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.	Not Started yet	Completed
80	At Jhunsi STP, works for set-up of laboratory are pending. Laboratory instruments are still not available at site.	Lab instruments received at site, but lab set up is pending due to non-completion of finishing works in Lab room	Completed
81	At Jhunsi STP, installation of permanent lights inside and outside the units for complete site are pending.	Work is in progress	Work is under progress

JHUNSI STP AND ASSOCIATE INFRASTRUCTURE			
E&M Work			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
82	At Jhunsi STP, installation of asset management system is not started yet.	Not Started yet	Work is under progress
83	At Jhunsi STP, work for ventilation system is pending.	Work is in progress	Completed
84	At Jhunsi STP, painting work for various MS structure installed at site is pending.	Work is in progress	Work is in progress
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.	Work is in progress	If any problem arise during the O&M, same will be taken care.
86	At Jhunsi STP, leakage test for sluice gates/valves is pending.	Work is in progress	Completed

2. NAINI-II STP AND ASSOCIATE INFRASTRUCTURE

2.1 Action taken report

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
Civil Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
1	At I&D of Sacha Baba Nall, civil construction work is pending.	Construction of retaining wall is pending.	Completed
2	At Mawaiya SPS, installation of doors and windows, finishing works are pending.	Not completed yet	Work is under progress
3	At Mawaiya SPS, installation main gate for panel room is pending.	Not Started Yet	Completed
4	At Mawaiya SPS, construction of loading and unloading bay is pending.	Completed	Completed
5	At Mawaiya SPS, landscaping and site development work is pending.	Work is in Progress	Completed
6	At Mawaiya SPS, installation of permanent type display/sign boards is pending.	Not Started Yet	Completed
7	At Mawaiya SPS, permanent arrangement for water supply is pending.	Completed	Completed
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.	Construction is completed, painting and finishing works are pending	Construction is completed, painting and finishing works are under progress.
9	At Mahewaghat SPS, installation of doors and windows, finishing works are pending.	Not completed yet	Work is under progress.
10	At Mahewaghat SPS, construction of loading and unloading bay is pending.	Work is in Progress	Completed

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
Civil Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
11	At Mahewaghat SPS, landscaping and site development work is pending.	Work is in progress	Work is in progress
12	At Mahewaghat SPS, installation of permanent type display/sign boards is pending.	Not Started Yet	Completed
13	At Mahewaghat SPS, permanent arrangement for water supply is pending.	Completed	Completed
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.	Completed	Completed
15	At Naini-II STP, construction works for Road & Drain are pending.	Completed	Completed
16	At Naini-II STP, landscaping work for the site is pending.	Completed	Completed
17	At Naini-II STP, installation of doors and windows, finishing works for the STP are pending.	Installation of door and windows are pending for battery room, door for main entrance at first floor of Process Building.	Work is under progress.
18	At Naini-II STP, water proofing for all units is pending.	Water proofing for PTU area is pending	Process building work is under progress

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
Civil Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
19	At Naini-II STP, arrangements for rainwater harvesting are pending.	Not Started Yet	As the ground water table is already high so in this condition rain water harvesting is not required.
20	At Naini-II STP, construction of plinth protection for all units is pending.	Completed	Completed
21	At Naini-II STP, concreting work is required at the top of Parshall flume.	Completed	Completed
22	At Naini-II STP, grouting work for new launder of tube settlers is pending.	Completed	Completed
23	At Naini-II STP, rectification for problem of Water logging in area between FCR and Tube settler tank is required.	Not Started Yet	Work is under progress.

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
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.	Not started yet	Will be taken care during the course of O&M.
2	At I&D of Sacha Baba Nall and Kharkhuni Nalla , E&M work is pending.	At Sachha baba Nall, installation of screen at overflow of I&D is pending. At Kharkhuni Nalla, installation of	Work is under progress

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
	At Mawaiya I&D structure. Leakage found near scouring gate of I&D at Mawaiya SPS.	scour valve is pending. Rectification of problem for Leakage from scouring gate of I&D at Mawaiya SPS is not started yet.	
3	At Mawaiya SPS, commissioning of differential level transmitter for mechanical screens is pending.	Not started yet	Completed
4	At Mawaiya SPS, service water line connection to screw conveyor is pending.	Not required.	Not required
5	At Mawaiya SPS, installation of chimney for DG sets as per CPCB norms is pending.	Not started yet	Work is under progress
6	At Mawaiya SPS, commissioning of harmonic filter panel is pending.	Not started yet	Work is under progress
7	At Mawaiya SPS, commissioning of ventilation system is pending.	Completed	Completed
8	At Mawaiya SPS, installation of fire-fighting system is pending.	Not started yet	Completed
9	At Mawaiya SPS, painting of doors and windows is pending.	Not started yet	Completed
10	At Mawaiya SPS, MS structure painting work is pending.	Completed	Completed
11	At Mawaiya SPS, VFD for pump no. 4 is not working.	Not started yet	Work is under progress

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
12	At all I&Ds Mahewaghat SPS, installation of manual screen at overflow is pending.	Completed	Completed
13	At Mahewaghat SPS, commissioning of differential level transmitter for mechanical screens is pending.	Completed	Completed
14	At Mahewaghat SPS, VFD for one pump is not working.	Completed	Completed
15	At Mahewaghat SPS, feedback from pumps is not coming in SCADA system.	Completed	Completed
16	At Mahewaghat SPS, testing of fire alarm and fire extinguisher system is pending.	Installation of fire extinguishers is pending	Work is under progress
17	At Mahewaghat SPS, commissioning of harmonic filter panel is pending.	Not started yet	Work is under progress
18	At Mahewaghat SPS, MS Structure support painting work is pending.	Completed	Completed
19	At Mahewaghat SPS, installation of chute for screw conveyor of mechanical screen is pending.	Installation is completed but painting is pending	Completed
20	At Mahewaghat SPS, commissioning of ventilation system is pending.	Completed	Completed
21	At Naini-II MPS, commissioning of differential level transmitter for mechanical screens is pending.	Completed for 1 out of 2 mechanical screens.	Completed

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
22	At Naini-II MPS, installation of partition gate in wet well is pending.	Not started yet	The gate is not required. However, the concessionaire has procured the gate and same will be installed during O&M if required.
23	At Naini-II MPS, shutter painting work is pending in panel room.	Completed	Completed
24	At Naini-II MPS, installation of fire-fighting system is pending.	Not started yet	Work is under progress
25	At Naini-II MPS, installation of chequered plate in battery room is pending.	Completed	Completed
26	At Naini-II STP, commissioning of differential level transmitter for mechanical screens is pending.	Installation for 1 out of 2 mechanical screens is pending and commissioning work is pending for both.	Completed
27	At Naini-II STP, commissioning of harmonic filter panel is pending.	Not started yet	Work is under progress
28	At Naini-II STP, knob for ON/OFF switch for APFC Panel no.02 is damaged.	Completed	Completed
29	At Naini-II STP, commissioning of HMIs for VFD panels is pending.	Configuration work is pending	Work is under progress
30	At Naini-II STP, calibration of inlet and outlet analyzers are working but its calibration is pending.	Calibration is completed but it is not showing correct values of parameters. Arrangements for auto cleaning of sensors through air are pending.	Completed

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
31	At Naini-II STP, DO analyzers for FCR tanks are working but its calibration is pending.	Calibration is completed but it is not showing correct values of parameters. Arrangements for auto cleaning of sensors through air are pending.	Completed
32	At Naini-II STP, solenoid valves for DO analyzers at FCR tanks are not installed for automatic cleaning of sensors.	Not started yet	Completed
33	At Naini-II STP, terminal plate for motor of blower no. 4 is damaged.	Not started yet	Work is under progress.
34	At Naini-II STP, installation of EOT in blower room is pending.	Installation of beam is completed but EOT is not installed.	Installation of beam is completed and EOT is procured at site and same will be installed during O&M if required.
35	At Naini-II STP, calibration of outlet flowmeter is pending.	Completed	Completed
36	At Naini-II STP, painting of pipes for air compressor is pending.	Completed	Completed
37	At Naini-II STP, installation of EOT for PTU is pending.	Not started yet	The EOT is procured by the concessionaire and same will be installed during O&M if require.
38	At Naini-II STP, laying of scum line form grit chamber to sludge tank is pending.	Not started yet	Work is under Progress,
39	At Naini-II STP, installation of chute for grit conveyor is pending.	Completed	Completed

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
40	At Naini-II STP, commissioning of lime dosing system is pending.	Completed	Completed
41	At Naini-II STP, installation of various instruments related to equipment are pending.	Completed	Completed
42	At Naini-II STP, transmission of signals from outlet analyzer to CPCB servers is pending.	Not started yet	Work is under progress
43	At Naini-II STP, solar power plant is not operating at full load.	Completed for 800 KW plant as per CA however work for plant of extra capacity is in progress.	Completed
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.	Communication pending from chlorination unit, tube settler drain valve, Sludge mixer, Manual screen actuator, grit removal systems, sludge dewatering unit and air compressor unit. Concessionaire is required to provide communication as per approved IO list.	All equipment communication work completed except Chlorination system and same is under progress.
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.	Work is in progress	Completed
46	At Naini-II STP, work for cooling water line to air line from aeration blowers is pending.	Completed	Completed

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
47	At Naini-II STP, work for providing potable water reservoir and related pipeline is pending.	Completed	Completed
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.	Not started yet	Work is under progress
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.	Not started yet	Work is under progress
50	At Naini-II STP, installation of chimney for DG sets as per CPCB norms is pending.	Completed	Completed
51	At Naini-II STP, compressors are not taken in operation yet.	Completed	Completed
52	At Naini-II STP, works for leak detection system and neutralization tower are pending.	Commissioning work is pending	Completed
53	At Naini-II STP, installation of asset management system is not started yet.	Not started yet	Work is under progress
54	At Naini-II STP, work for ventilation system in various units is pending.	Completed	Completed
55	At Naini-II STP, painting work for various MS structure installed at site is pending.	Completed	Completed

NAINI-II STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
56	At Naini-II STP, leakage test for sluice gates/valves is pending.	Work is in progress	Completed

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-Apr-23	43070	43.07	7.49	7.86	160	22	320	36	294	22	NA	600	0.3	23.7	1300000	Plant availability is 100%
2-Apr-23	40030	40.03	7.53	7.82	155	27	304	32	287	23	NA	800	0.2	25.6	1400000	Plant availability is 100%
3-Apr-23	37960	37.96	7.18	7.31	160	26	316	36	295	25	NA	600	0.3	25.5	1700000	Plant availability is 100%
4-Apr-23	38730	38.73	7.26	7.49	165	21	312	40	285	20	NA	500	0.3	25	1400000	Plant availability is 100%
5-Apr-23	37470	37.47	7.38	7.76	160	23	328	44	318	22	NA	600	0.2	24.8	1300000	Plant availability is 100%
6-Apr-23	37660	37.66	7.29	7.64	170	25	316	36	298	25	NA	500	0.2	25.5	1400000	Plant availability is 100%
7-Apr-23	37630	37.63	7.43	7.81	160	24	328	40	305	27	NA	700	0.2	25	1300000	Plant availability is 100%
8-Apr-23	36290	36.29	7.31	7.88	165	26	312	40	296	23	NA	600	0.3	23.9	1400000	Plant availability is 100%
9-Apr-23	35980	35.98	7.23	7.65	160	24	304	36	286	20	NA	500	0.2	24.3	1400000	Plant availability is 100%
10-Apr-23	37060	37.06	7.19	7.41	155	25	308	40	292	20	NA	400	0.2	24.6	1300000	Plant availability is 100%
11-Apr-23	36970	36.97	7.48	7.81	170	26	316	44	302	22	NA	600	0.3	25.4	1400000	Plant availability is 100%
12-Apr-23	36740	36.74	7.26	7.53	165	24	304	44	288	20	NA	500	0.2	25	1700000	Plant availability is 100%
13-Apr-23	34700	34.7	7.21	7.46	155	22	324	40	297	23	NA	700	0.2	24.8	1300000	Plant availability is 100%
14-Apr-23	35880	35.88	7.42	7.74	170	23	328	36	319	21	NA	500	0.3	25.2	1400000	Plant availability is 100%
15-Apr-23	35370	35.37	7.33	7.66	165	21	316	40	285	20	NA	700	0.2	25.6	1700000	Plant availability is 100%
16-Apr-23	35900	35.9	7.25	7.62	155	20	324	36	307	24	NA	800	0.3	24.6	1400000	Plant availability is 100%
17-Apr-23	36220	36.22	7.35	7.57	160	22	320	44	309	21	NA	600	0.2	24.3	1300000	Plant availability is 100%
18-Apr-23	35950	35.95	7.25	7.68	170	24	312	36	294	20	NA	500	0.3	24.8	1400000	Plant availability is 100%
19-Apr-23	35750	35.75	7.28	7.74	165	24	324	40	304	23	NA	700	0.2	26	1300000	Plant availability is 100%
20-Apr-23	35770	35.77	7.22	7.56	155	23	316	36	297	24	NA	800	0.2	24.5	1400000	Plant availability is 100%
21-Apr-23	34760	34.76	7.31	7.59	170	25	308	40	288	20	NA	400	0.3	25	1300000	Plant availability is 100%
22-Apr-23	35330	35.33	7.27	7.66	160	22	320	44	295	23	NA	600	0.3	24.4	1700000	Plant availability is 100%
23-Apr-23	35920	35.92	7.23	7.58	155	24	324	40	306	25	NA	0	0.2	24.7	0	Plant availability is 100%
24-Apr-23	33630	33.63	7.34	7.73	165	23	328	44	302	22	NA	500	0.3	25.2	1400000	Plant availability is 100%
25-Apr-23	33580	33.58	7.54	7.85	160	20	316	36	287	21	NA	700	0.3	25.5	1200000	Plant availability is 100%
26-Apr-23	33010	33.01	7.42	7.83	170	26	352	48	324	28	NA	800	0.2	24.8	1700000	Plant availability is 100%
27-Apr-23	33120	33.12	7.56	7.86	155	21	320	36	281	20	NA	400	0.2	24.4	1300000	Plant availability is 100%
28-Apr-23	35980	35.98	7.65	7.87	160	22	356	40	337	25	NA	600	0.3	24.1	1400000	Plant availability is 100%
29-Apr-23	35730	35.73	7.25	7.7	165	27	340	44	310	26	NA	500	0.3	25.2	1200000	Plant availability is 100%
30-Apr-23	37230	37.23	7.23	7.57	155	24	332	40	287	23	NA	700	0.3	24.9	1700000	Plant availability is 100%
Average	36314.00	36.31	7.34	7.67	161.83	23.53	320.93	39.60	299.17	22.60	NA	580.00	0.25	24.88	1370000.00	

Source: Logbook of Laboratory at Sewage Treatment Plant

3. PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE

3.1 Action taken report

PHAPHAMAU STP AND ASSCIATED INFRASTRUCTURE			
Civil Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
1	At Basna Nalla SPS, flooring work, fixing of kota Stone and tiles is pending for complete site is pending.	Flooring work is completed at SPS building but fixing of Kota stone is pending.	Completed
2	At Basna Nalla SPS, fixing of hand railing for some parts of SPS is pending.	Fixing work is completed but painting is pending.	Completed
3	At Basna Nalla SPS, construction of boundary wall and approach road is pending.	Not started yet	Boundary wall can not be constructed as per the site condition, approach road work is under progress.
4	At Basna Nalla SPS, epoxy coating in wet well, painting work and water proofing over the roof is pending.	Water proofing work is completed but epoxy coating is not started yet	Water proofing work is completed but We have used the SRC cement during the construction so epoxy coating on structure is not required.
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.	Shuttering work for casting of slab for first floor is in progress.	Shuttering work for casting of slab for first floor is completed and 2nd floor slab work is under progress.
6	At Basna Nalla SPS, construction of RCC chamber for flow meter is pending.	Completed	Completed
7	At Basna Nalla SPS, installation of door & windows, finishing works are pending.	Completed except for PLC room	Work is under progress

PHAPHAMAU STP AND ASSCIATED INFRASTRUCTURE			
Civil Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
8	At Basna Nalla SPS, plumbing works for toilet are pending.	Completed	Completed
9	At Basna Nalla SPS, repairing of taper wall after weir is pending.	Completed	Completed
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.	Work is in progress	Completed
11	At Basna Nalla SPS, construction of loading and unloading bay is pending.	Work is in progress	Completed
12	At Basna Nalla SPS, landscaping and site development work is pending.	Work is in progress	Landscaping work is not required as per site conditions.
13	At Basna Nalla SPS, installation of permanent type display/sign boards is pending.	Not started yet	Work is under progress.
14	At Basna Nalla SPS, permanent arrangement for water supply is pending.	Completed	Completed
15	At Shantipuram MPS, glass fitting is required for air vents in panel room of MPS.	Not started yet	Completed
16	At Shantipuram MPS, finishing of floor below electrical panel of mechanical screen and screw conveyer is pending in MPS.	Completed	Completed
17	At Shantipuram MPS, landscaping and site development work is pending.	Work is in progress	Work is in progress

PHAPHAMAU STP AND ASSCIATED INFRASTRUCTURE			
Civil Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
18	At Shantipuram MPS, installation of permanent type display/sign boards is pending.	Not started yet	Work is in progress
19	At Shantipuram MPS, permanent arrangement for water supply is pending.	Completed	Completed
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.	Completed	Completed
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.	Completed	Completed
23	At Phaphamau STP, construction works for road & drain are pending.	Work is in progress	Completed
24	At Phaphamau STP, fixing of hand railing for some parts of STP are pending.	Fixing completed but Painting is under progress	Completed
25	At Phaphamau STP, landscaping and development work for complete site is pending.	Work is in progress	Work is in progress
26	At Phaphamau STP, finishing works for various units of STP are pending.	Work is in progress	Completed
27	At Phaphamau STP, water proofing over the roof for all units is pending.	Completed	Completed

PHAPHAMAU STP AND ASSCIATED INFRASTRUCTURE			
Civil Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 06th May 2023**
28	At Phaphamau STP, rectification required for leakage from chamber in which screw conveyor for grit removal unit is pending.	Completed	Completed
29	At Phaphamau STP, installation of partition wall inside laboratory is pending.	Not started yet	Work is under progress
30	At Phaphamau STP, construction of plinth protection for all units is pending.	Work is in progress	Work is in progress
31	At Phaphamau STP, construction of boundary wall near main gate is pending.	Work is in progress	Work is in progress
32	At Phaphamau STP, arrangements for rainwater harvesting are pending.	Not started yet	As the ground water table is already high so in this condition rain water harvesting is not required.

PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
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.	Not started yet	Will be taken care during O&M.
2	At Basna Nalla SPS, installation of permanent lights inside units and outside area are pending.	Work in progress	Work in progress
3	At Basna Nalla SPS, installation of level transmitter in raw sewage sump is pending.	Completed	Completed
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.	Completed	Completed
5	At Basna Nalla SPS, installation of EOT is completed but its commissioning work is pending.	Completed	Completed
6	At Basna Nalla SPS, installation of fire alarm and firefighting system is pending.	Work in progress	Completed
7	At Basna Nalla SPS, installation of CCTV system is not started yet.	Completed	Completed
8	At Basna Nalla SPS, work for ventilation system is pending.	Completed	Completed
9	At Basna Nalla SPS, painting for MS structure inside the facility is pending.	Work is in progress	Completed

PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
10	At Basna Nalla SPS, installation of sluice gate in partition wall in downstream side of screens is pending.	Not started yet	Completed
11	At Basna Nalla SPS, it is required to provide hand trolley for collecting waste from Screw conveyor of mechanical screens.	Not available at site	Will be arranged in O&M.
12	At Basna Nalla SPS, leakage test for sluice gates/valves is pending.	Work is in progress	Completed
13	At Basna Nalla SPS, pressure transmitter in header line is installed but it is not working.	Completed	Completed
14	At Basna Nalla SPS, some fault indications were coming even when the HT panel was in operation. Rectification of this problem is required.	Completed	Completed
15	At Basna Nalla SPS, Flow transmitter calibration is pending	Not started yet	Completed
16	At Basna Nalla SPS, installation of chimney for DG as per CPCB norms is pending.	Not started yet	Not Required as per the site conditions
17	At Basna Nalla SPS, UPS system is not working.	Completed	Completed
18	At Shantipuram MPS, support installation is required for pipeline coming from screw conveyor of grit removal unit.	Completed	Completed
19	At Shantipuram MPS, installation of chute for screw conveyor of mechanical screens is pending.	Completed	Completed

PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
20	At Shantipuram MPS, leakage test for sluice gates/valves is pending.	Work is in progress	Completed
21	At Shantipuram MPS, three out of five pumps are working. Remaining two pumps are not working due to problem in VFDs.	Completed	Completed
22	At Shantipuram MPS, installation of fire alarm is completed but its commissioning work is pending. Also, installation of firefighting arrangement is pending.	Work in progress	Work in progress
23	At Shantipuram MPS, installation of CCTV system is pending.	Completed	Completed
24	At Shantipuram MPS, installation of EOT is completed but its commissioning is pending.	Completed	Completed
25	At Shantipuram MPS, pressure transmitter in header line is installed but it is not working.	Completed	Completed
26	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.	Completed	Completed
27	At Phaphamau STP, installation of inlet analyzer is completed but its calibration is pending.	Calibration is completed but it is not showing correct values of parameters. Arrangements for auto	Calibration is completed and necessary other work is under progress.

PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
		cleaning of sensors through air are pending.	
28	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.	Calibration is completed but it is not showing correct values of parameters. Arrangements for auto cleaning of sensors through air are pending.	Calibration is completed and necessary other work is under progress.
29	At Phaphamau STP, transmission of signals from outlet analyzer to CPCB servers is pending.	Not started yet	Work is under progress
30	At Phaphamau STP, chlorine analyzer at the outlet of STP is working but its calibration is pending.	Completed	Completed
31	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.	Calibration is completed but it is not showing correct values of parameters. Arrangements for auto cleaning of sensors through air are pending.	Calibration is completed and necessary other work is under progress.
32	At Phaphamau STP, flowmeters in pipelines from PTU to FCR are working but they are not showing accurate flow at present. Also, its calibration from OEM side is pending	Not started yet	Completed
33	At Phaphamau STP, outlet flowmeter is not working.	Completed	Completed

PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
34	At Phaphamau STP, installation of various instruments related to equipment are pending.	Work is in progress	Completed
35	At Phaphamau STP, sludge dewatering building is not in operation due to problem in dewatering feed pumps.	Completed	Completed
36	At Phaphamau STP, commissioning of lime dosing system is pending.	Completed	Completed
37	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.	Completed	Completed
38	At Phaphamau STP, installation of solar power plant is not completed yet.	Currently, installation of solar plant of 77.1 KW capacity but as per solar plant of 110 KW is to be installed at STP as per CA.	Completed
39	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.	Installation completed but Configuration is under progress	Completed
40	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	Installation completed but Configuration is under progress	Completed

PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
	of equipment and flow is pending in SCADA system.		
41	At Phaphamau STP, installation of EOTs for all units are pending.	Not started yet	Completed
42	At Phaphamau STP, work for cooling water line to air line from aeration blowers is pending.	Completed	Completed
43	At Phaphamau STP, installation of HMIs in VFD panel room of aeration blowers is pending.	Installation completed but configuration is under progress	Installation completed but configuration is under progress
44	At Phaphamau STP, work for providing potable water reservoir and related pipeline is pending.	Completed	Completed
45	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.	Not started yet	Work is under progress
46	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.	Completed	Completed
47	At Phaphamau STP, works for set-up of laboratory are pending. Laboratory instruments are still not available at site.	Completed	Completed

PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE			
E&M Works			
Sr. No.	**Observation**	**Project Engineer April 23 month inspection report**	**M/s. PWPL Reply as on dated 6th May 2023**
48	At Phaphamau STP, installation of chimney for DG as per CPCB norms is pending.	Work is in progress	Completed
49	At Phaphamau STP, compressors are not taken in operation yet. Pipeline and installation of its supports, painting work is pending.	Completed	Completed
50	At Phaphamau STP, leakage rectification from poppet valve at inlet of tubesettlers is required.	Completed	Completed
51	At Phaphamau STP, works for leak detection system and neutralization tower are pending.	Not started yet	Completed
52	At Phaphamau STP, installation of asset management system is not started yet.	Not started yet	Work is under progress
53	At Phaphamau STP, work for ventilation system in various units is pending.	Work is in progress	Completed
54	At Phaphamau STP, painting work for various MS structure installed at site is pending.	Work is in progress	Completed
55	At Phaphamau STP, leakage test for sluice gates/valves is pending.	Work is in progress	Completed
56	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.	Not started yet	If any problem arise during the O&M, same will be taken care.
57	At Phaphamau STP, transmission of signals from outlet analyser to CPCB servers is pending.	Not started yet	Work is under progress

3.2 KPI Report

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

adani ORGANICA

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-Apr-23	13440	13.44	7.28	7.69	160	15	364	32	318	22	NA	400	0.3	23.50	1700000	Plant availability is 100%
2-Apr-23	13950	13.98	7.35	7.71	155	14	372	36	325	24	NA	600	0.3	23.95	1300000	Plant availability is 100%
3-Apr-23	13410	13.41	7.32	7.74	150	18	360	40	328	21	NA	700	0.2	23.50	1400000	Plant availability is 100%
4-Apr-23	13460	13.46	7.24	7.63	165	16	368	36	318	23	NA	500	0.3	24.56	1700000	Plant availability is 100%
5-Apr-23	12700	12.7	7.34	7.75	160	14	356	32	317	21	NA	600	0.2	23.40	1300000	Plant availability is 100%
6-Apr-23	12370	12.37	7.31	7.72	165	15	372	36	325	23	NA	700	0.3	23.29	1700000	Plant availability is 100%
7-Apr-23	13240	13.24	7.25	7.67	155	15	356	32	316	24	NA	400	0.2	23.15	1300000	Plant availability is 100%
8-Apr-23	13140	13.14	7.28	7.65	160	14	360	36	320	25	NA	500	0.3	24.36	1400000	Plant availability is 100%
9-Apr-23	14530	14.53	7.35	7.71	160	15	372	40	325	22	NA	600	0.2	23.67	1700000	Plant availability is 100%
10-Apr-23	14050	14.05	7.31	7.65	160	17	364	36	318	23	NA	500	0.3	24.57	1400000	Plant availability is 100%
11-Apr-23	14010	14.01	7.33	7.72	165	16	372	40	331	25	NA	400	0.3	23.66	1700000	Plant availability is 100%
12-Apr-23	16230	16.23	7.27	7.69	170	17	368	32	324	23	NA	600	0.2	24.18	1300000	Plant availability is 100%
13-Apr-23	13460	13.46	7.36	7.72	165	15	364	36	317	21	NA	500	0.3	23.93	1400000	Plant availability is 100%
14-Apr-23	12230	12.23	7.33	7.75	160	16	356	32	315	24	NA	700	0.2	23.95	1700000	Plant availability is 100%
15-Apr-23	14360	14.36	7.36	7.73	165	18	368	36	319	22	NA	500	0.3	24.15	1300000	Plant availability is 100%
16-Apr-23	14690	14.69	7.29	7.71	175	16	360	32	328	25	NA	600	0.2	24.64	1400000	Plant availability is 100%
17-Apr-23	14100	14.1	7.34	7.65	155	18	364	36	326	24	NA	500	0.3	23.37	1300000	Plant availability is 100%
18-Apr-23	13860	13.86	7.33	7.74	160	17	360	44	315	23	NA	700	0.2	25.69	1700000	Plant availability is 100%
19-Apr-23	14820	14.82	7.26	7.54	165	16	356	40	320	25	NA	600	0.2	24.25	1400000	Plant availability is 100%
20-Apr-23	13210	13.21	7.51	7.63	160	17	364	44	318	26	NA	500	0.3	25.00	1700000	Plant availability is 100%
21-Apr-23	14310	14.31	7.25	7.64	165	18	368	44	320	23	NA	600	0.2	24.37	1300000	Plant availability is 100%
22-Apr-23	13460	13.46	7.31	7.7	170	16	356	36	310	26	NA	500	0.3	24.30	1400000	Plant availability is 100%
23-Apr-23	13130	13.13	7.3	7.65	162	15	368	40	315	25	NA	600	0.2	24.38	1700000	Plant availability is 100%
24-Apr-23	13140	13.14	7.34	7.73	155	18	380	44	310	23	NA	400	0.3	24.27	1300000	Plant availability is 100%
25-Apr-23	13180	13.18	7.32	7.71	170	15	364	36	327	24	NA	700	0.2	23.97	1700000	Plant availability is 100%
26-Apr-23	13870	13.87	7.34	7.75	165	16	372	40	325	23	NA	500	0.3	24.18	1400000	Plant availability is 100%
27-Apr-23	13520	13.52	7.31	7.65	166	15	368	36	317	25	NA	700	0.2	23.18	1300000	Plant availability is 100%
28-Apr-23	13540	13.54	7.34	7.73	173	18	364	40	323	28	NA	600	0.2	23.98	1700000	Plant availability is 100%
29-Apr-23	13790	13.79	7.18	7.79	175	15	368	44	316	19	NA	500	0.3	24.80	1400000	Plant availability is 100%
30-Apr-23	16160	16.16	7.19	7.78	165	17	360	36	318	18	NA	700	0.2	24.90	1300000	Plant availability is 100%
Average	13778.67	13.78	7.31	7.70	163.53	16.13	364.80	37.47	320.13	23.33	NA	563.33	0.25	24.12	1476666.67	

Source: Logbook of Laboratory at Sewage Treatment Plant.

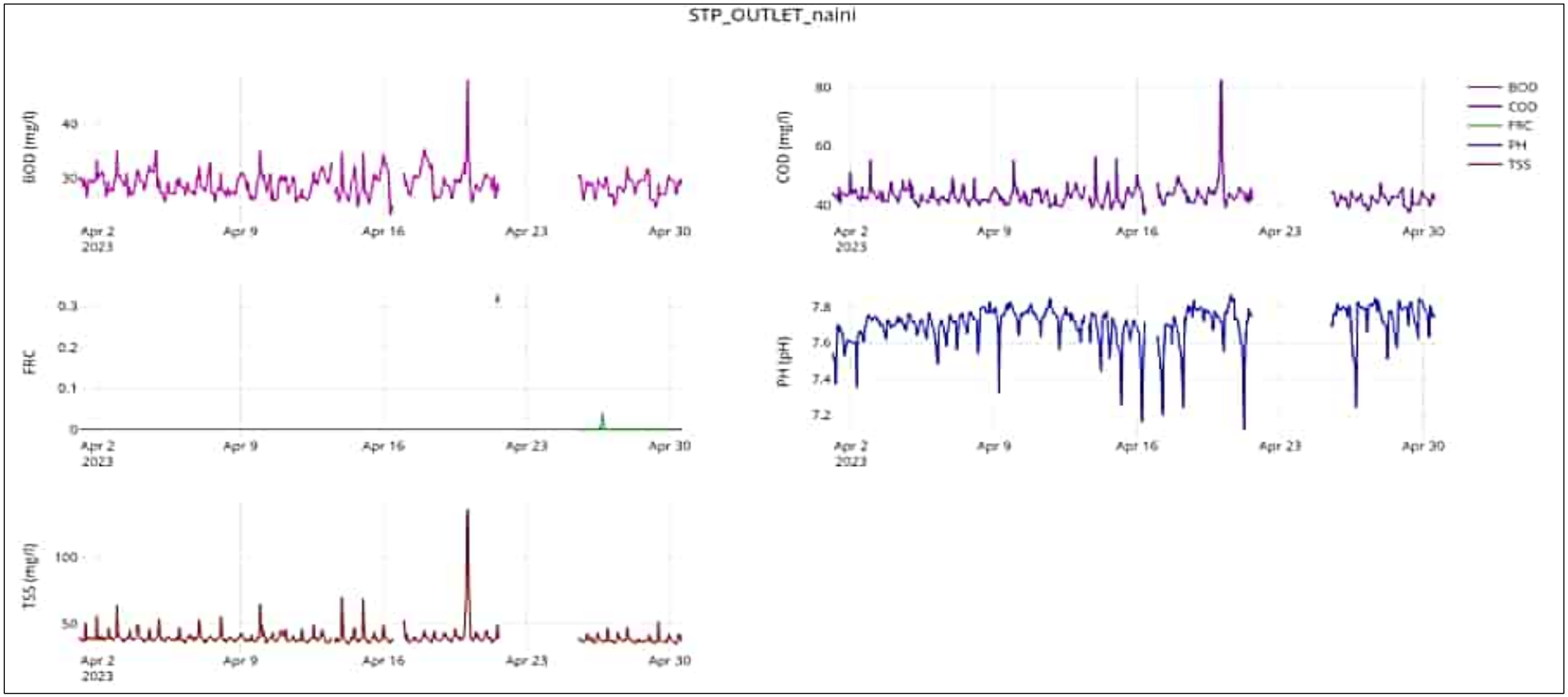
ANNEXURE-II

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 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-Apr-23	114090	114.09	7.31	7.53	140	29	346	44	300	37	NA	700	0.3	24.35	1300000	Plant availability is 100%
2-Apr-23	121040	121.04	7.39	7.51	120	30	338	42	298	38	NA	500	0.2	25.11	1400000	Plant availability is 100%
3-Apr-23	114420	114.42	7.45	7.6	130	27	356	44	295	40	NA	700	0.2	24.40	1200000	Plant availability is 100%
4-Apr-23	188180	118.18	7.53	7.62	145	28	352	43	287	36	NA	400	0.3	24.18	1700000	Plant availability is 100%
5-Apr-23	116890	116.89	7.57	7.61	135	27	336	42	301	37	NA	800	0.3	25.07	1400000	Plant availability is 100%
6-Apr-23	120590	120.59	7.43	7.57	145	28	354	44	305	38	NA	600	0.2	24.51	1300000	Plant availability is 100%
7-Apr-23	121560	121.56	7.52	7.60	140	27	338	42	308	36	NA	500	0.2	23.98	1200000	Plant availability is 100%
8-Apr-23	130900	123.90	7.47	7.62	120	26	342	41	300	37	NA	700	0.3	25.18	1400000	Plant availability is 100%
9-Apr-23	121420	121.42	7.58	7.65	145	28	350	40	304	35	NA	400	0.3	24.45	1700000	Plant availability is 100%
10-Apr-23	118180	118.18	7.6	7.63	135	29	340	42	307	38	NA	600	0.2	24.17	1300000	Plant availability is 100%
11-Apr-23	115280	115.28	7.54	7.61	140	27	338	44	302	39	NA	800	0.2	25.20	1200000	Plant availability is 100%
12-Apr-23	123040	123.04	7.18	7.58	130	29	354	48	314	43	NA	700	0.3	24.76	1400000	Plant availability is 100%
13-Apr-23	117570	117.57	7.41	7.56	125	30	322	46	298	41	NA	400	0.3	25.07	1700000	Plant availability is 100%
14-Apr-23	122880	122.59	7.46	7.64	145	27	344	41	314	36	NA	500	0.2	25.40	1200000	Plant availability is 100%
15-Apr-23	118880	118.88	7.42	7.68	125	29	332	43	308	36	NA	600	0.2	25.10	1300000	Plant availability is 100%
16-Apr-23	118460	118.48	7.48	7.52	130	30	336	46	292	47	NA	400	0.3	24.70	1400000	Plant availability is 100%
17-Apr-23	115420	115.42	7.49	7.63	140	29	344	43	301	37	NA	600	0.2	25.30	1100000	Plant availability is 100%
18-Apr-23	112100	112.10	7.47	7.69	145	28	336	45	305	40	NA	800	0.3	25.20	1700000	Plant availability is 100%
19-Apr-23	113880	113.88	7.25	7.75	135	29	328	42	298	36	NA	500	0.2	24.90	1200000	Plant availability is 100%
20-Apr-23	118620	118.62	7.41	7.72	140	30	330	48	294	52	NA	400	0.2	24.73	1300000	Plant availability is 100%
21-Apr-23	116020	116.02	7.07	6.91	145	25	318	38	291	34	NA	600	0.3	25.11	1700000	Plant availability is 100%
22-Apr-23	119580	119.58	7.48	7.67	140	27	340	42	307	38	NA	700	0.3	25.04	1300000	Plant availability is 100%
23-Apr-23	115210	115.21	7.5	7.65	130	28	324	43	305	39	NA	800	0.2	24.41	1400000	Plant availability is 100%
24-Apr-23	118220	118.22	7.48	7.76	135	27	332	42	299	39	NA	700	0.3	24.80	1200000	Plant availability is 100%
25-Apr-23	117480	117.48	7.46	7.79	125	29	328	44	304	40	NA	600	0.2	25.10	1700000	Plant availability is 100%
26-Apr-23	116410	116.41	7.45	7.72	130	28	326	41	307	38	NA	500	0.3	24.30	1300000	Plant availability is 100%
27-Apr-23	113780	113.78	7.44	7.77	125	27	319	43	290	39	NA	700	0.2	25.40	1400000	Plant availability is 100%
28-Apr-23	109360	109.36	7.43	7.69	150	29	336	40	294	37	NA	500	0.3	25.20	1200000	Plant availability is 100%
29-Apr-23	108650	108.65	7.45	7.76	145	25	340	42	307	36	NA	800	0.2	24.90	1400000	Plant availability is 100%
30-Apr-23	108340	108.34	7.45	7.72	130	28	330	44	312	40	NA	700	0.2	25.00	1300000	Plant availability is 100%
Average	119562.33	116.99	7.44	7.63	135.50	28.00	336.97	42.97	301.57	38.63	NA	606.67	0.25	24.83	1376666.67	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken report

Month of Site Inspection	April 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 23rd March 2023, 28th March 2023, 7th April 2023, 12th April 2023, 26th April 2023 and following observations were made after action taken by Concessionaire on March 23 month recommendation given by Project Engineer

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Naini-I STP	114.09 to 123.90
2	Gaughat MPS	113.93 to 124.44
3	Chacharnalla SPS	33.88 to 41.92

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	26 to 30 mg/l
2	TSS – Effluent	< 50 mg/l	35 to 46 mg/l
3	pH – Effluent	6.5 – 9.0	7.51 to 7.68
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 800 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.98 to 25.40 %
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	35.96 to 45.95
2	Naini I Associated Infrastructure	68.95 to 77.50

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 March 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. Online analyzer at inlet is replaced with new one. Calibration for the same is completed by site team however, validation of calibration in presence of UPJN/Project Engineer is pending.
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, data is not available from 3:30 PM on 21st Apr 2023 to 12:15 PM on 25th Apr 2023. Also, sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. Also, 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, NMCG has also instructed to operate Gas Engine for 24 hrs each day in meeting dated 26th April 2023 hence Concessionaire is required to do the needful at the earliest.
   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 was completed but during recent visit it was found that bars have got loose again. 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.
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 is required for the same so that scum collection and removal can be done automatically.
17. In all PSTs, it is observed that lumps of sludge are coming to the top in some parts due to which outlet quality of PSTs is deteriorating.
18. Telescopic valves of Primary Settling Tanks are not working.
19. 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.
20. 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.
21. Aeration tank of 20 MLD is in operation. Air distribution is proper in the tank . Commissioning of DO analyzer is not completed yet.
22. All Aeration blowers are working.
23. All Final Settling Tanks are working.
24. It is suggested to install torque switches in all clarifiers for having better protection against excessive load on scrapper.

25. 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.
26. In RSPH unit of 60 MLD, 2 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.
27. In RSPH unit of 20 MLD, both Pumps are working.
28. 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 we are found the filled chlorine cylinder are kept in unproper way it is very risky.
29. Leak absorption system is working. Checklist for the same must be prepared and recorded properly every month.
30. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
31. Both thickeners are in working condition. Installation of actuators for drain valves is pending. Installation of flowmeter in lines from blending tank to thickener is completed but calibration for one flowmeter is pending.
32. All thickened sludge transfer pumps are working.
33. In TEPH, all pumps are OK for operation for Dandi and Naini Area.
34. For TEPH panel, modification of room is completed but panel erection is not started yet as per the electrical norms.
35. Both DGs are in operation. Installation work of chimney for DGs as per CPCB norms is pending.
36. 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.
37. All filtrate pumps are working.
38. 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.
39. Both dewatering feed pumps are under maintenance. Currently, submersible pump is being used for transferring sludge from digesters to dewatering building.
40. For sludge drying beds, it is required to check filter media and gravels as water is not percolating from SDBs.
41. All Digesters are working.
42. Heat exchangers, sludge recirculation pumps for all digesters are working.
43. In compressor room, all six compressors are working.
44. Both Gas holders are working.
45. Gas flare is working.
46. H2S scrubber unit is working. Analyzers fitted at inlet & outlet unit are working.
47. 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.
48. 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.

49. 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.
50. Rehabilitation works for tube well unit are pending.
51. Landscaping work of the plant must be improved.
52. Construction of storm water drains for some parts of STP are not constructed yet.
53. 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.
54. As already discussed, painting of all units from inside and outside is not completed yet. Concessionaire to please do the needful.
55. CCTV camera at the outlet point of STP is not working.
56. 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.
57. 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.

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

    a) Currently all VNC pumps are working.

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 very low and must be maintained around 0.99, rectification of this problem is required.

59. 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:

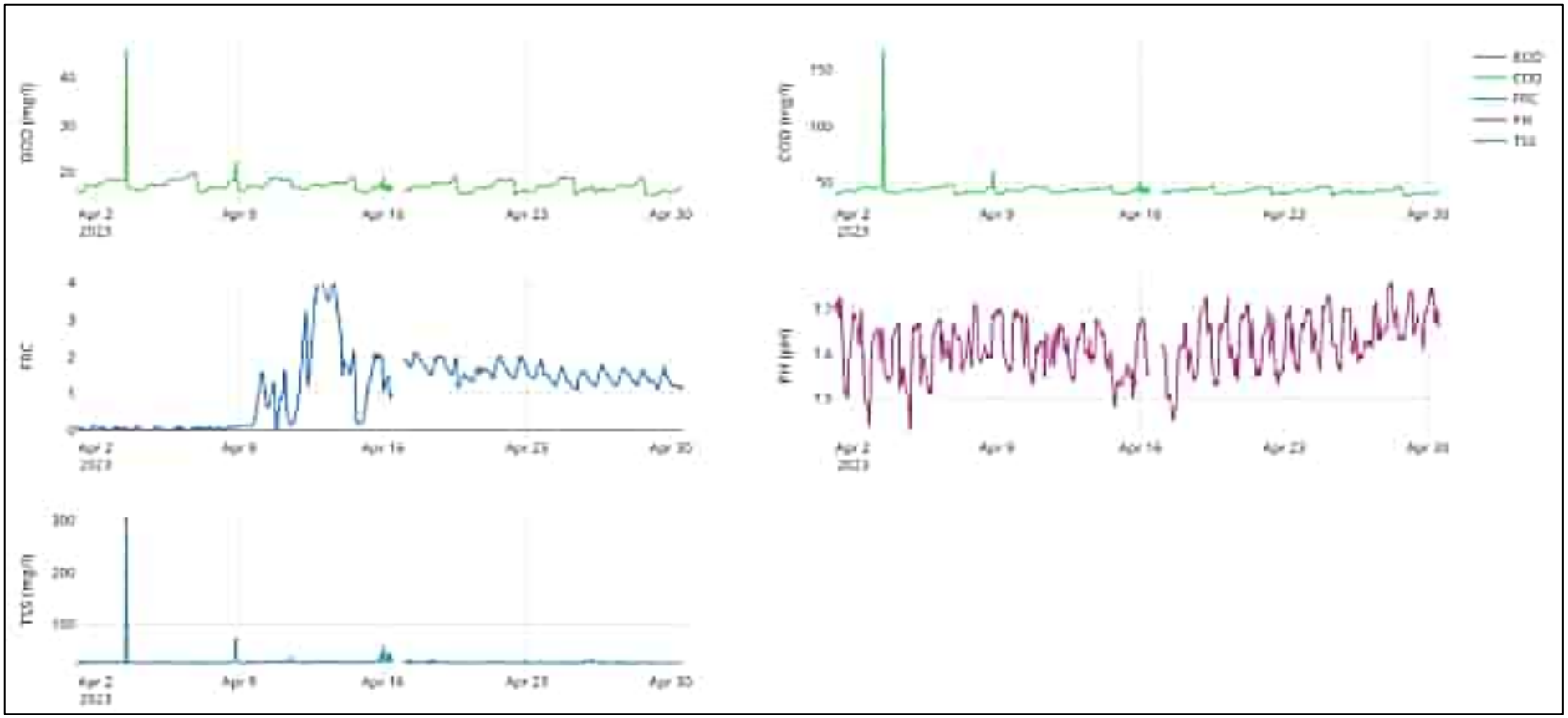
a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
b) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
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-Apr-23	81420	81.42	7.33	7.67	125	16	332	44	307	26	NA	600	0.3	23.65	1700000	Plant availability is 100%
2-Apr-23	70.59	70.59	7.31	7.62	135	18	324	48	298	25	NA	700	0.2	23.89	1400000	Plant availability is 100%
3-Apr-23	70760	70.76	7.28	7.61	130	16	336	44	291	26	NA	500	0.3	23.93	1700000	Plant availability is 100%
4-Apr-23	68850	68.85	7.35	7.6	135	17	316	40	287	27	NA	600	0.2	23.22	1400000	Plant availability is 100%
5-Apr-23	72030	72.03	7.29	7.62	140	18	324	44	297	26	NA	400	0.3	24.47	1300000	Plant availability is 100%
6-Apr-23	69030	69.03	7.29	7.65	145	19	328	48	283	25	NA	700	0.2	23.76	1700000	Plant availability is 100%
7-Apr-23	70300	70.3	7.29	7.64	130	17	332	40	289	26	NA	500	0.3	23.22	1400000	Plant availability is 100%
8-Apr-23	71400	71.4	7.38	7.63	135	18	336	40	290	26	NA	600	0.2	24.54	1700000	Plant availability is 100%
9-Apr-23	74500	74.5	7.32	7.65	125	16	324	44	287	27	NA	700	0.3	24.38	1400000	Plant availability is 100%
10-Apr-23	74300	74.3	7.27	7.64	130	17	332	48	307	26	NA	400	0.2	23.77	1700000	Plant availability is 100%
11-Apr-23	70030	70.03	7.28	7.62	140	18	328	44	292	27	NA	500	0.3	23.9	1300000	Plant availability is 100%
12-Apr-23	71200	71.2	7.31	7.61	130	17	336	40	298	26	NA	600	0.2	23.35	1400000	Plant availability is 100%
13-Apr-23	73100	73.1	7.28	7.65	125	16	328	44	285	27	NA	700	0.3	23.29	1700000	Plant availability is 100%
14-Apr-23	74090	74.09	7.26	7.6	135	18	316	40	282	26	NA	500	0.2	23.16	1400000	Plant availability is 100%
15-Apr-23	74890	74.89	7.28	7.58	140	16	324	44	276	27	NA	600	0.3	24.03	1700000	Plant availability is 100%
16-Apr-23	74350	74.35	7.31	7.62	130	17	320	40	295	26	NA	700	0.3	23.76	1300000	Plant availability is 100%
17-Apr-23	72650	72.65	7.23	7.56	125	16	312	44	278	25	NA	500	0.2	23.98	1400000	Plant availability is 100%
18-Apr-23	73880	73.88	7.26	7.63	135	17	316	40	286	27	NA	600	0.2	23.63	1300000	Plant availability is 100%
19-Apr-23	78160	78.16	7.28	7.65	130	18	324	44	293	26	NA	700	0.3	23.84	1700000	Plant availability is 100%
20-Apr-23	71230	71.23	7.31	7.63	135	16	332	36	296	25	NA	400	0.2	24.9	1300000	Plant availability is 100%
21-Apr-23	74630	74.63	7.27	7.66	140	18	312	44	275	27	NA	600	0.3	23.35	1400000	Plant availability is 100%
22-Apr-23	70780	70.78	7.18	7.63	130	17	316	40	286	26	NA	500	0.2	24.47	1700000	Plant availability is 100%
23-Apr-23	69970	69.97	7.25	7.65	125	16	324	44	297	25	NA	700	0.3	24	1400000	Plant availability is 100%
24-Apr-23	75320	75.32	7.18	7.67	140	18	332	48	305	26	NA	400	0.3	23.24	1300000	Plant availability is 100%
25-Apr-23	76810	76.81	7.21	7.66	130	17	328	44	272	25	NA	600	0.2	22.77	1700000	Plant availability is 100%
26-Apr-23	74560	74.56	7.26	7.64	135	16	336	40	295	27	NA	500	0.3	24.09	1400000	Plant availability is 100%
27-Apr-23	76810	76.81	7.22	7.67	130	18	324	44	284	26	NA	700	0.3	23.52	1700000	Plant availability is 100%
28-Apr-23	74700	74.7	7.31	7.69	140	17	316	40	278	25	NA	400	0.2	24.07	1300000	Plant availability is 100%
29-Apr-23	70300	70.3	7.33	7.71	145	16	312	36	282	26	NA	600	0.3	24.11	1400000	Plant availability is 100%
30-Apr-23	71120	71.12	7.28	7.73	135	19	324	40	279	25	NA	500	0.3	24.57	1700000	Plant availability is 100%
Average	76708.02	73.06	7.28	7.64	133.50	17.10	324.86	42.53	289.06	26.00	NA	566.67	0.25	23.85	1496666.67	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken report

Month of Site Inspection	April 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 March 2023, 30th March 2023, 5th April 2023, 17th April 2023 and following observations were made after action taken by Concessionaire on March 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Rajapur STP	68.85 to 81.42
2	Rajapur SPS	5.82 to 8.36
3	Mumfodganj MPS	62.64 to 75.63

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 19 mg/l
2	TSS – Effluent	< 30 mg/l	25 to 27 mg/l
3	pH – Effluent	6.5 – 9.0	7.58 to 7.67
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.16 to 24.88 %
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	7.68 to 21.34
2	Rajapur Associated Infrastructure	49.32 to 68.67

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 March 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. Online analyzer at inlet is replaced with new one. Calibration for the same is completed by site team however, validation of calibration in presence of UPJN/Project Engineer is pending.
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, data is not available from 10:00 AM on 16th Apr 2023 to 12:15 AM on 17th Apr 2023. Also, sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. Also, 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. 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 were 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. 2 out of 4 sludge transfer pumps are in working condition. Concessionaire is required to rectify the problems.
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. Current chlorine analyzer for the effluent is not giving correct values. Installation of new chlorine analyzers is Completed and calibration is done by site team.
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. 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.
24. There is variation in recorded values of flow from inlet flowmeter at Rajapur STP and outlet flowmeter of Mumfordganj SPS, please rectify the problem.
25. There is variation in recorded values of flow from inlet flowmeters at Rajapur STP and outlet flowmeter of Rajapur STP, please rectify the problem.
26. 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.
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 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.
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 is not completed yet, Concessionaire to please do the needful.
29. 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 is not possible 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.

30. 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, all 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 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.

31. 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 certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
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.

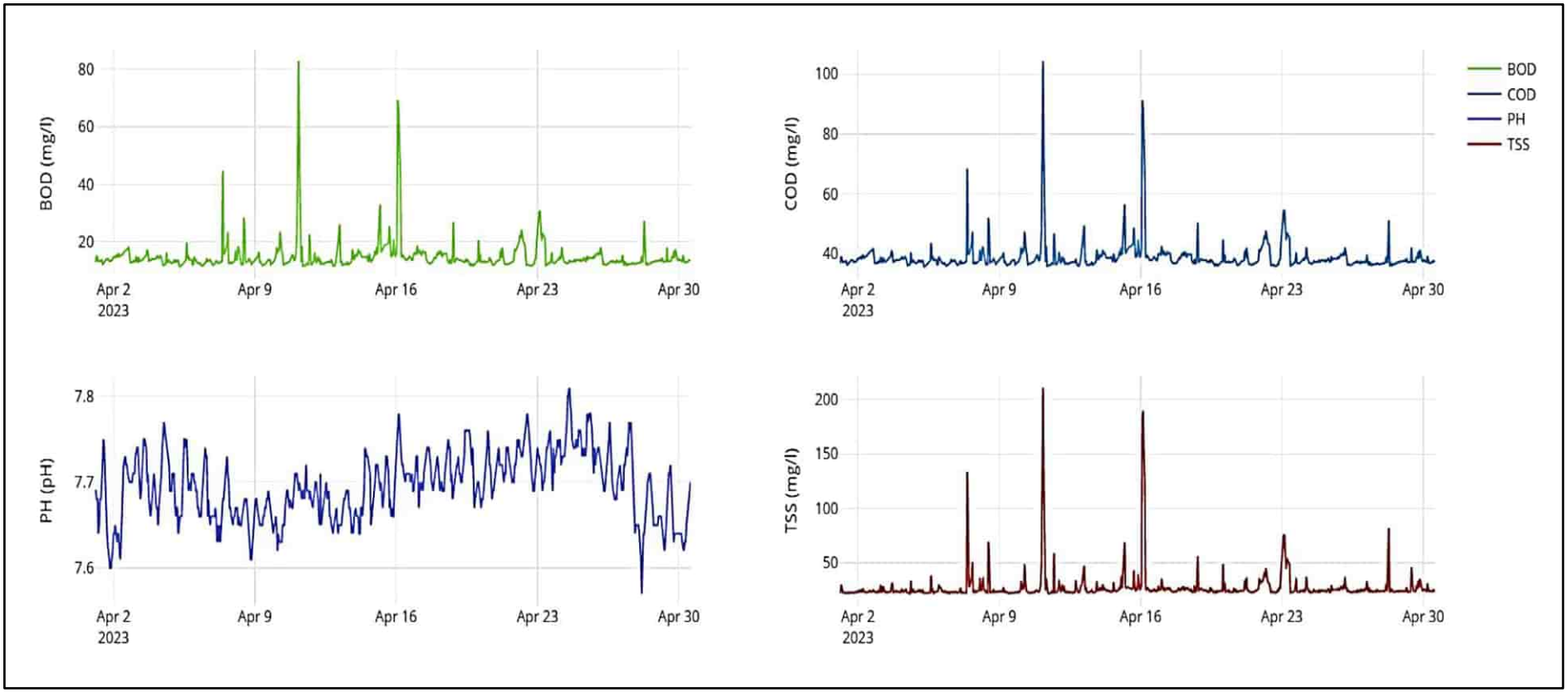
ANNEXURE-III

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 Prayagraj
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 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-Apr-23	60820	60.82	7.14	7.68	135	14	344	36	282	24	NA	500	0.3	24.04	1300000	Plant availability is 100%
2-Apr-23	62150	62.15	7.18	7.66	145	16	324	40	293	24	NA	400	0.2	23.5	1700000	Plant availability is 100%
3-Apr-23	57370	57.37	7.23	7.74	140	15	329	40	288	25	NA	700	0.2	23.69	1400000	Plant availability is 100%
4-Apr-23	58080	58.08	7.26	7.72	135	14	312	36	296	27	NA	600	0.3	24.47	1300000	Plant availability is 100%
5-Apr-23	57280	57.28	7.28	7.76	130	14	320	40	301	26	NA	500	0.2	23.44	1400000	Plant availability is 100%
6-Apr-23	62780	62.78	7.22	7.69	135	13	324	36	298	25	NA	400	0.3	23.66	1300000	Plant availability is 100%
7-Apr-23	61200	61.2	7.27	7.74	145	17	336	44	291	27	NA	700	0.3	24.82	1400000	Plant availability is 100%
8-Apr-23	61270	61.27	7.23	7.72	130	14	308	40	286	24	NA	600	0.2	23.21	1700000	Plant availability is 100%
9-Apr-23	61120	61.12	7.26	7.78	150	13	328	40	301	25	NA	400	0.3	24.23	1400000	Plant availability is 100%
10-Apr-23	61780	61.78	7.24	7.68	145	15	320	36	298	26	NA	700	0.2	23.57	1300000	Plant availability is 100%
11-Apr-23	62050	62.05	7.18	7.71	150	16	328	44	291	24	NA	500	0.3	23.55	1400000	Plant availability is 100%
12-Apr-23	60030	60.03	7.29	7.78	135	12	316	40	296	26	NA	600	0.3	23.86	1700000	Plant availability is 100%
13-Apr-23	63350	63.35	7.24	7.7	140	15	312	40	297	28	NA	700	0.2	23.22	1400000	Plant availability is 100%
14-Apr-23	59150	59.15	7.26	7.73	150	16	320	36	286	23	NA	600	0.3	24.18	1300000	Plant availability is 100%
15-Apr-23	60350	60.35	7.14	7.76	145	18	360	40	280	28	NA	500	0.3	22.53	1400000	Plant availability is 100%
16-Apr-23	60570	60.57	7.12	7.7	150	19	320	48	268	26	NA	600	0.3	24.79	1700000	Plant availability is 100%
17-Apr-23	63110	63.11	7.17	7.8	135	16	312	40	284	25	NA	400	0.3	24.16	1400000	Plant availability is 100%
18-Apr-23	60830	60.83	7.28	7.64	145	15	328	36	284	24	NA	500	0.2	22.59	1300000	Plant availability is 100%
19-Apr-23	63620	63.62	7.28	7.85	130	13	316	40	292	26	NA	400	0.3	24.79	1700000	Plant availability is 100%
20-Apr-23	58930	58.93	7.22	7.76	135	15	312	36	306	28	NA	600	0.3	24.35	1400000	Plant availability is 100%
21-Apr-23	61920	61.92	7.26	7.74	130	14	308	40	298	26	NA	400	0.2	23.76	1300000	Plant availability is 100%
22-Apr-23	61950	61.95	7.42	7.78	145	17	324	44	302	28	NA	700	0.3	23.22	1400000	Plant availability is 100%
23-Apr-23	57900	57.9	7.52	7.71	140	18	316	40	299	25	NA	500	0.3	24.47	1400000	Plant availability is 100%
24-Apr-23	58270	58.27	7.58	7.81	130	14	312	36	305	24	NA	400	0.2	23.57	1700000	Plant availability is 100%
25-Apr-23	61170	61.17	7.37	7.76	145	15	328	44	296	26	NA	600	0.3	24.82	1300000	Plant availability is 100%
26-Apr-23	60670	60.67	7.42	7.8	135	14	308	40	288	25	NA	500	0.2	23.69	1400000	Plant availability is 100%
27-Apr-23	60250	60.25	7.46	7.77	145	13	316	40	294	26	NA	700	0.3	23.5	1300000	Plant availability is 100%
28-Apr-23	58630	58.63	7.36	7.72	140	14	324	36	276	28	NA	400	0.3	24.26	1400000	Plant availability is 100%
29-Apr-23	59170	59.17	7.56	7.82	130	15	320	40	286	26	NA	600	0.2	24.23	1700000	Plant availability is 100%
30-Apr-23	62180	62.18	7.44	7.76	150	14	312	40	295	25	NA	500	0.3	23.64	1300000	Plant availability is 100%
Average	60598.33	60.60	7.30	7.74	139.83	14.93	321.20	39.60	291.90	25.70	NA	540.00	0.26	23.86	1436666.67	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken report

Month of Site Inspection	April 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. 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 21st March 2023, 27th March 2023, 3rd April 2023, 10th April 2023, 20th April 2023 and following observations were made after action taken by Concessionaire on March 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Numayadahi STP	57.28 to 63.35
2	Ghagharnalla MPS	58.16 to 64.90
3	Sasur Kadheri SPS	31.40 to 39.02
4	Lukerganj SPS	2.45 to 4.85

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	12 to 17 mg/l
2	TSS – Effluent	< 30 mg/l	23 to 28 mg/l
3	pH – Effluent	6.5 – 9.0	7.66 to 7.80
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.53 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	57.16 to 72.15
2	Numayadahi Associated Infrastructure	96.09 to 101.51

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 March 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 Ghagharnalla MPS, Sasur Kadheri SPS and Lukarganj 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. Repairing of electrical panel for screens is required.
9. All Biotowers were in operation. Arms of biotower mechanism for all biotowers are completely rusted and must be replaced at the earliest. Replacement of net is also 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. 3 out of 4 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. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
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. 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.
27. There is variation in recorded values of flow from inlet flowmeter at Numayadahi STP and outlet flowmeter of Ghagharnalla MPS, please rectify the problem.
28. There is variation in recorded values of flow from inlet flowmeter at Numayadahi STP and outlet flowmeter of Numayadahi STP, please rectify the problem.
29. For Ghagharnalla MPS, following issues are required to be resolved:

    a) Currently, it was observed that overflow occurs sometimes during peak hours 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 (4 new + 2 old) are in working condition.
    d) Currently, 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.

30. 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.

31. 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.
b) One mechanical screen is working and one is in maintenance.
c) Painting for units is in progress
d) Both DG sets are working.

32. 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:

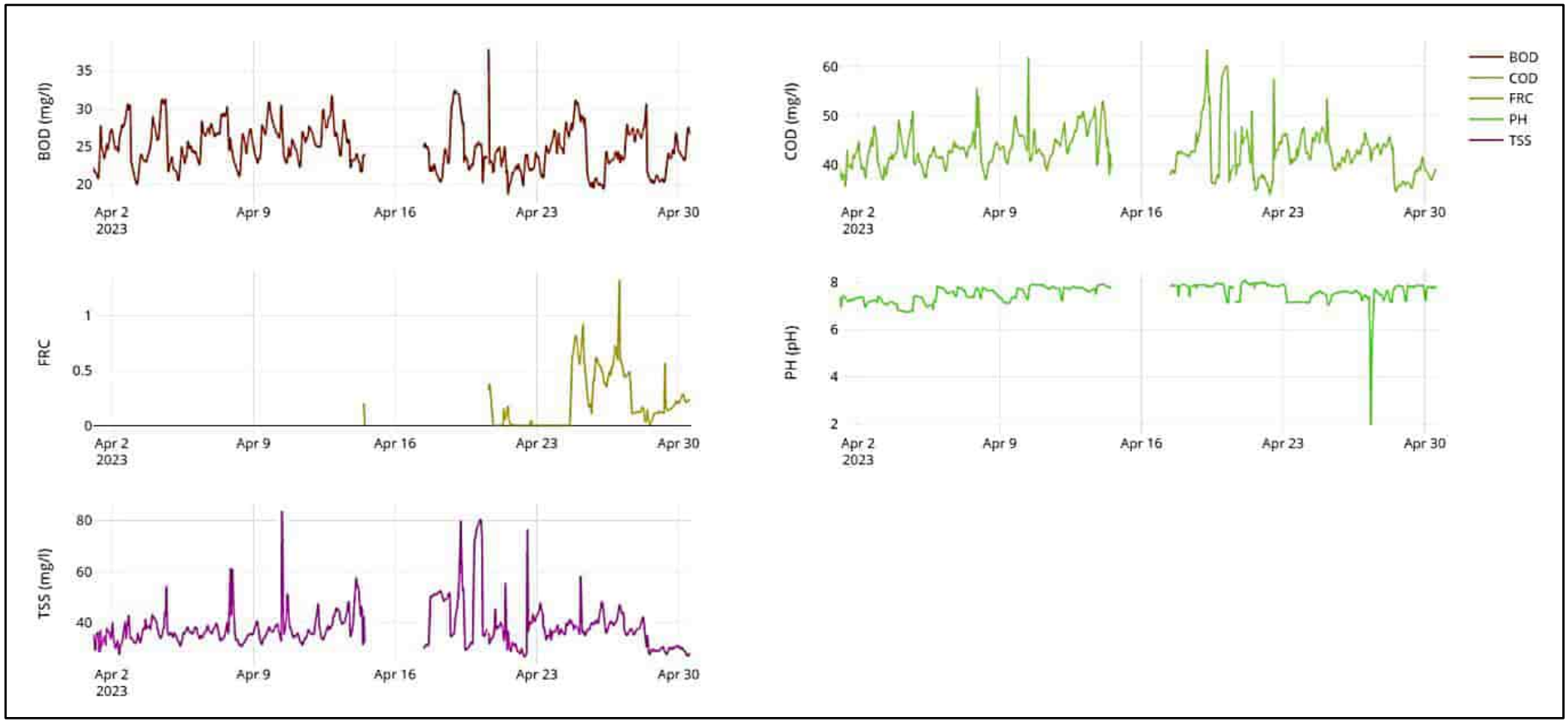
a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
b) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
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-Apr-23	41020	41.02	7.39	7.41	160	26	360	40	306	35	NA	400	0.3	24.4	1200000	Plant availability is 100%
2-Apr-23	37410	37.41	7.37	7.4	165	28	364	40	309	37	NA	600	0.3	24.8	1400000	Plant availability is 100%
3-Apr-23	36370	36.37	7.29	7.3	155	24	356	44	311	38	NA	800	0.2	23.9	1700000	Plant availability is 100%
4-Apr-23	35810	35.81	7.01	7.15	160	27	360	40	320	40	NA	700	0.3	24.6	1300000	Plant availability is 100%
5-Apr-23	36520	36.52	7.27	7.32	165	25	364	44	298	37	NA	500	0.2	24.2	1200000	Plant availability is 100%
6-Apr-23	37230	37.23	7.51	7.58	155	28	356	44	290	38	NA	600	0.2	25.3	1400000	Plant availability is 100%
7-Apr-23	36400	36.4	7.48	7.52	160	29	360	44	310	40	NA	800	0.3	24.2	1400000	Plant availability is 100%
8-Apr-23	34820	34.82	7.53	7.59	165	26	364	40	308	37	NA	700	0.2	23.8	1700000	Plant availability is 100%
9-Apr-23	37650	37.65	7.51	7.53	155	28	356	40	304	39	NA	600	0.3	24.7	1700000	Plant availability is 100%
10-Apr-23	35780	35.78	7.54	7.58	160	27	360	44	302	42	NA	500	0.3	23.7	1400000	Plant availability is 100%
11-Apr-23	36020	36.02	7.53	7.55	165	26	368	40	307	37	NA	700	0.2	23.8	1700000	Plant availability is 100%
12-Apr-23	35580	35.58	7.49	7.52	160	28	356	44	303	40	NA	400	0.3	25.2	1200000	Plant availability is 100%
13-Apr-23	34610	34.61	7.52	7.54	165	25	360	48	295	42	NA	500	0.2	24.8	1300000	Plant availability is 100%
14-Apr-23	37040	37.04	7.55	7.62	150	24	356	44	298	39	NA	700	0.3	24.5	1400000	Plant availability is 100%
15-Apr-23	35240	35.24	7.49	7.59	155	25	364	40	304	36	NA	600	0.2	25.3	1400000	Plant availability is 100%
16-Apr-23	36980	36.98	7.54	7.58	160	27	356	44	295	42	NA	800	0.3	23.8	1700000	Plant availability is 100%
17-Apr-23	36150	36.15	7.49	7.65	155	24	364	40	298	39	NA	500	0.2	24.6	1200000	Plant availability is 100%
18-Apr-23	34860	34.86	7.52	7.62	160	26	360	44	305	43	NA	600	0.3	24.8	1300000	Plant availability is 100%
19-Apr-23	33920	33.92	7.56	7.67	155	27	356	44	307	44	NA	400	0.3	25.3	1100000	Plant availability is 100%
20-Apr-23	35260	35.26	7.52	7.58	160	23	360	48	302	46	NA	700	0.2	24.7	1400000	Plant availability is 100%
21-Apr-23	34220	34.22	7.4	7.79	155	24	352	44	327	38	NA	500	0.3	24.1	1400000	Plant availability is 100%
22-Apr-23	36500	36.5	7.46	7.68	160	24	360	44	314	39	NA	600	0.2	23.8	1300000	Plant availability is 100%
23-Apr-23	32410	32.41	7.54	7.45	150	22	352	40	318	35	NA	400	0.2	24.5	1300000	Plant availability is 100%
24-Apr-23	34020	34.02	7.43	7.49	155	25	364	44	308	37	NA	700	0.3	25.3	1400000	Plant availability is 100%
25-Apr-23	35340	35.34	7.51	7.55	160	26	360	44	324	39	NA	800	0.3	24.8	1700000	Plant availability is 100%
26-Apr-23	34240	34.24	7.46	7.57	155	24	352	40	304	42	NA	500	0.2	23.7	1200000	Plant availability is 100%
27-Apr-23	36600	36.6	7.52	7.11	165	26	360	44	298	38	NA	600	0.3	24.6	1300000	Plant availability is 100%
28-Apr-23	36580	36.58	7.37	7.53	160	25	348	36	289	31	NA	700	0.2	25.2	1100000	Plant availability is 100%
29-Apr-23	35600	35.6	7.33	7.56	155	24	352	36	296	28	NA	500	0.2	24.9	1400000	Plant availability is 100%
30-Apr-23	36980	36.98	7.35	7.48	160	26	344	40	332	30	NA	800	0.3	24.3	1700000	Plant availability is 100%
Average	35905.33	35.91	7.45	7.52	158.67	25.67	358.13	42.27	306.07	38.27	NA	606.67	0.25	24.52	1396666.67	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken report

Month of Site Inspection	April 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 24th March 2023, 31st March 2023, 6th April 2023, 15th April 2023, 24th Apr 2023 and following observations were made after action taken by Concessionaire on March 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Salori STP	34.61 to 41.02
2	Salori MPS	34.61 to 41.02

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	24 to 29 mg/l
2	TSS – Effluent	< 50 mg/l	35 to 42 mg/l
3	pH – Effluent	6.5 – 9.0	7.15 to 7.69
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 800 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.70 to 25.30 %
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.

- **Status of Energy Consumption:**

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Salori STP	88.06 to 103.65
2	Salori Associated Infrastructure	49.57 to 53.84

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 March 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, data is not available from 12:30 PM on 14th Apr 2023 to 10:15 AM on 17th Apr 2023. Also, sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. Also, 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. All Grit Removal Units are working.
  7. 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.
  8. Both FAB units are working.
  9. DO analyzers for both FAB units are not working, please rectify the problem.
  10. All Aeration blowers are working.
  11. 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.
  12. 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.
  13. Quality of effluent is satisfactory.
  14. For Sludge dewatering unit, installation of instruments (flowmeter for poly dosing line, etc.) is pending, Concessionaire to please do the needful.
  15. Both Sludge transfer pumps for Clarisettler are working.
  16. Both Filtrate pumps are working.
  17. Both chlorinators and chlorine booster pumps are working.
  18. Current chlorine analyzer for the effluent is not giving correct values. Installation of new chlorine analyzers is Completed and calibration is done by site team.
  19. 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.
  20. Installation of new chlorine analyzer at outlet is completed but it is not showing correct

values.

21. Thickener unit is working.
22. Both DGs are working.
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 are OK for operation out of 6. 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 can 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 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 certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
    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.

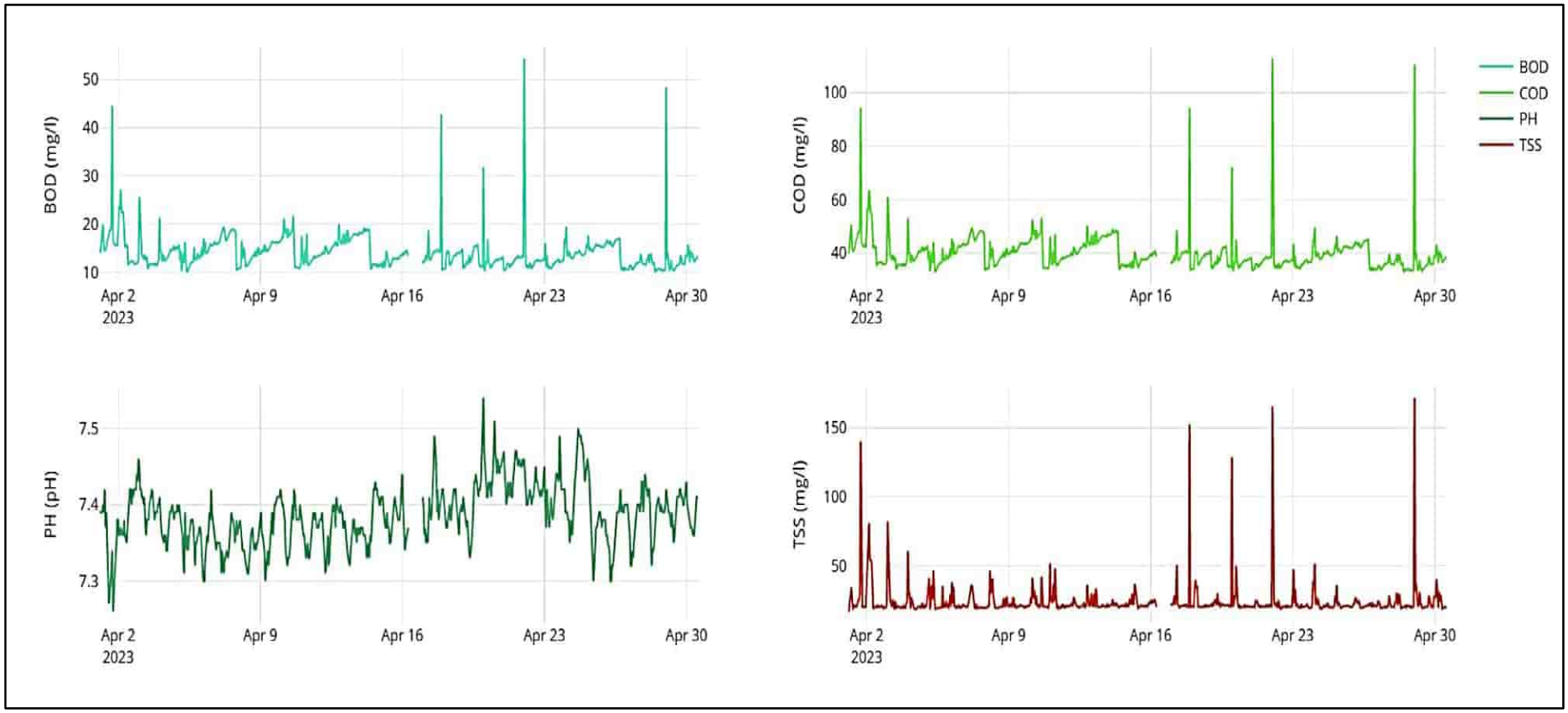
i) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
j) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

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 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-Apr-23	30470	30.47	7.21	7.45	140	14	312	40	263	22	NA	400	0.3	23.45	1400000	Plant availability is 100%
2-Apr-23	28720	28.72	7.18	7.51	145	16	320	44	270	28	NA	600	0.2	24.19	1300000	Plant availability is 100%
3-Apr-23	28320	28.32	7.23	7.52	135	17	308	40	283	25	NA	500	0.2	23.63	1700000	Plant availability is 100%
4-Apr-23	28080	28.08	7.26	7.55	140	14	316	44	276	24	NA	700	0.3	24.31	1200000	Plant availability is 100%
5-Apr-23	27510	27.51	7.19	7.48	130	13	304	36	280	22	NA	500	0.2	23.29	1300000	Plant availability is 100%
6-Apr-23	28600	28.6	7.25	7.53	145	15	320	40	268	23	NA	400	0.2	22.48	1400000	Plant availability is 100%
7-Apr-23	28460	28.46	7.2	7.47	140	16	312	44	273	21	NA	600	0.3	23.11	1300000	Plant availability is 100%
8-Apr-23	27170	27.17	7.26	7.5	135	13	308	40	284	28	NA	500	0.2	24.18	1200000	Plant availability is 100%
9-Apr-23	29510	29.51	7.22	7.49	150	14	324	44	279	23	NA	700	0.2	24.35	1700000	Plant availability is 100%
10-Apr-23	27950	27.95	7.28	7.51	145	15	316	40	265	24	NA	600	0.3	23.36	1300000	Plant availability is 100%
11-Apr-23	28640	28.64	7.24	7.54	140	13	312	36	270	23	NA	400	0.3	22.98	1200000	Plant availability is 100%
12-Apr-23	28520	28.52	7.21	7.46	145	14	320	40	263	22	NA	500	0.2	23.49	1400000	Plant availability is 100%
13-Apr-23	28050	28.05	7.25	7.49	155	17	328	48	277	26	NA	400	0.2	24.16	1300000	Plant availability is 100%
14-Apr-23	29190	29.19	7.27	7.55	145	15	316	40	284	22	NA	600	0.3	23.56	1700000	Plant availability is 100%
15-Apr-23	28410	28.41	7.23	7.53	130	13	308	36	266	24	NA	500	0.2	24.53	1400000	Plant availability is 100%
16-Apr-23	29030	29.03	7.2	7.56	135	14	312	40	274	25	NA	700	0.3	22.5	1200000	Plant availability is 100%
17-Apr-23	28070	28.07	7.18	7.48	140	13	304	36	281	23	NA	600	0.2	24.09	1300000	Plant availability is 100%
18-Apr-23	26980	26.98	7.24	7.52	150	14	316	40	258	21	NA	400	0.3	23.37	1700000	Plant availability is 100%
19-Apr-23	28010	28.01	7.28	7.45	155	13	324	36	270	24	NA	500	0.2	23.59	1400000	Plant availability is 100%
20-Apr-23	28140	28.14	7.22	7.5	145	12	312	36	276	22	NA	600	0.2	24.29	1300000	Plant availability is 100%
21-Apr-23	29750	29.75	7.26	7.49	140	13	320	40	283	21	NA	500	0.3	23.18	1200000	Plant availability is 100%
22-Apr-23	29780	29.78	7.21	7.54	135	12	308	36	261	22	NA	400	0.2	24.33	1400000	Plant availability is 100%
23-Apr-23	28650	28.65	7.24	7.51	130	13	300	36	273	21	NA	600	0.2	23.41	1300000	Plant availability is 100%
24-Apr-23	27880	27.88	7.22	7.44	140	14	312	40	286	27	NA	700	0.3	22.71	1200000	Plant availability is 100%
25-Apr-23	29710	29.71	7.25	7.47	130	15	304	44	279	22	NA	500	0.3	23.63	1300000	Plant availability is 100%
26-Apr-23	27850	27.85	7.2	7.48	145	16	316	40	269	23	NA	600	0.2	24.08	1700000	Plant availability is 100%
27-Apr-23	28290	28.29	7.23	7.53	150	11	320	36	275	21	NA	700	0.3	24.29	1400000	Plant availability is 100%
28-Apr-23	29410	29.41	7.19	7.49	140	12	312	32	284	20	NA	500	0.3	23.31	1300000	Plant availability is 100%
29-Apr-23	28870	28.87	7.24	7.52	130	11	300	36	278	22	NA	400	0.2	24.19	1400000	Plant availability is 100%
30-Apr-23	30830	30.83	7.21	7.43	135	13	308	40	265	20	NA	600	0.2	23.55	1200000	Plant availability is 100%
Average	28628.33	28.63	7.23	7.50	140.67	13.83	313.67	39.33	273.77	23.03	NA	540.00	0.24	23.68	1366666.67	

Source: Logbook of Laboratory at Sewage Treatment Plant

3.2 Action taken report

Month of Site Inspection	April 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 22nd March 2023, 29th March 2023 4th April 2023, 11th April 2023, 19th April 2023 and following observations were made after action taken by Concessionaire on March 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Kodra STP	27.17 to 30.47
2	Kodra MPS	27.17 to 30.47

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 17 mg/l
2	TSS – Effluent	< 30 mg/l	21 to 28 mg/l
3	pH – Effluent	6.5 – 9.0	7.45 to 7.56
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.48 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	92.22 to 99.61
2	Kodra Associated Infrastructure	94.87 to 101.74

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 March 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, data is not available from 07:00 AM on 16th Apr 2023 to 12:15 AM on 17th Apr 2023. Also, sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. Also, 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. One grit removal unit is working. One grit removal unit is in maintenance.
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 tank.
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. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
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:

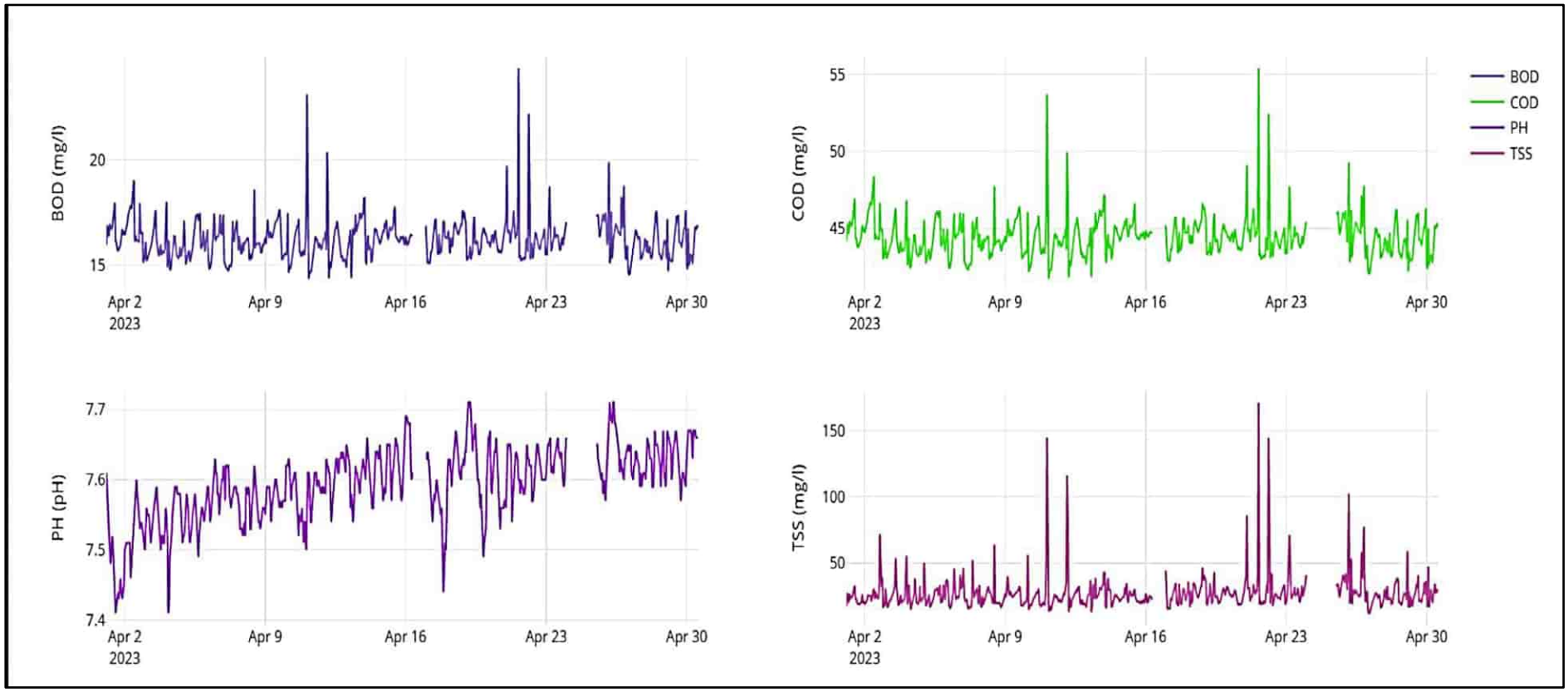
    a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
    b) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
    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.
- More awareness trainings for workers must be given for encouraging them to use PPEs.

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-Apr-23	12690	12.69	7.3	7.44	135	17	308	44	257	24	NA	500	0.3	22.29	1300000	Plant availability is 100%
2-Apr-23	13290	13.29	7.34	7.43	140	15	312	48	256	22	NA	400	0.3	22.82	1200000	Plant availability is 100%
3-Apr-23	12770	12.77	7.36	7.47	130	18	304	40	284	23	NA	500	0.3	23.20	1400000	Plant availability is 100%
4-Apr-23	13530	13.35	7.38	7.49	145	17	314	44	274	25	NA	600	0.2	23.86	1700000	Plant availability is 100%
5-Apr-23	12750	12.75	7.35	7.51	140	15	316	48	289	26	NA	400	0.3	23.59	1300000	Plant availability is 100%
6-Apr-23	12860	12.86	7.37	7.49	130	16	324	44	276	27	NA	500	0.2	22.56	1200000	Plant availability is 100%
7-Apr-23	13130	13.13	7.32	7.53	150	15	312	40	265	24	NA	700	0.2	23.39	1400000	Plant availability is 100%
8-Apr-23	12860	12.86	7.25	7.58	155	17	320	44	280	23	NA	400	0.3	22.46	1300000	Plant availability is 100%
9-Apr-23	13450	13.45	7.21	7.5	145	18	308	48	268	24	NA	300	0.2	23.18	1200000	Plant availability is 100%
10-Apr-23	12910	12.91	7.3	7.52	135	15	316	40	282	23	NA	500	0.3	23.51	1400000	Plant availability is 100%
11-Apr-23	13330	13.33	7.42	7.51	140	17	304	44	293	28	NA	400	0.3	23.72	1300000	Plant availability is 100%
12-Apr-23	13650	13.65	7.44	7.55	150	16	312	48	272	27	NA	500	0.3	23.41	1400000	Plant availability is 100%
13-Apr-23	12600	12.60	7.4	7.54	145	18	308	44	280	28	NA	700	0.3	22.47	1700000	Plant availability is 100%
14-Apr-23	13670	13.67	7.42	7.56	130	17	316	48	256	26	NA	600	0.3	21.90	1400000	Plant availability is 100%
15-Apr-23	12560	12.56	7.44	7.54	150	16	320	44	296	27	NA	400	0.2	23.58	1200000	Plant availability is 100%
16-Apr-23	13720	13.72	7.43	7.56	145	17	304	48	263	26	NA	500	0.3	23.46	1300000	Plant availability is 100%
17-Apr-23	12060	12.06	7.37	7.5	130	16	312	44	284	25	NA	500	0.3	22.97	1400000	Plant availability is 100%
18-Apr-23	12480	12.48	7.34	7.59	135	18	320	48	274	27	NA	400	0.3	23.46	1300000	Plant availability is 100%
19-Apr-23	13180	13.18	7.36	7.57	145	17	324	44	293	28	NA	600	0.2	23.58	1200000	Plant availability is 100%
20-Apr-23	13270	13.27	7.32	7.55	130	16	314	48	276	27	NA	500	0.3	22.80	1400000	Plant availability is 100%
21-Apr-23	14390	14.39	7.34	7.58	140	18	308	44	286	28	NA	400	0.3	22.35	1300000	Plant availability is 100%
22-Apr-23	13560	13.56	7.33	7.59	155	17	304	48	288	29	NA	600	0.2	22.44	1200000	Plant availability is 100%
23-Apr-23	13220	13.22	7.3	7.51	135	18	324	44	266	28	NA	500	0.3	22.42	1400000	Plant availability is 100%
24-Apr-23	13490	13.49	7.34	7.59	140	16	312	48	269	26	NA	400	0.3	22.35	1200000	Plant availability is 100%
25-Apr-23	12640	12.64	7.38	7.58	150	17	316	44	268	29	NA	300	0.3	23.07	1300000	Plant availability is 100%
26-Apr-23	13010	13.01	7.36	7.57	145	18	304	48	257	28	NA	500	0.2	23.72	1400000	Plant availability is 100%
27-Apr-23	12560	12.56	7.4	7.56	135	16	320	40	293	23	NA	400	0.3	22.51	1200000	Plant availability is 100%
28-Apr-23	12420	12.42	7.42	7.59	150	15	314	44	272	27	NA	300	0.3	23.50	1300000	Plant availability is 100%
29-Apr-23	13070	13.07	7.46	7.6	130	17	324	48	284	28	NA	600	0.3	22.25	1400000	Plant availability is 100%
30-Apr-23	13890	13.89	7.4	7.58	145	16	308	44	298	26	NA	400	0.3	22.42	1200000	Plant availability is 100%
Average	13101.00	13.09	7.36	7.54	141.00	16.63	313.48	45.07	278.97	26.07	NA	480.00	0.27	22.97	1330000.00	Plant availability is 100%

Source: Logbook of Laboratory at Sewage Treatment Plant

4.2 Inspection Report

Month of Site Inspection	April 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 22nd March 2023, 29th March 2023 4th April 2023, 11th April 2023, 21st April 2023 and following observations were made after action taken by Concessionaire on March 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Ponghat STP	12.56 to 13.72
2	Ponghat MPS	12.56 to 13.72

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 18
2	TSS – Effluent	< 30 mg/l	22 to 28
3	pH – Effluent	6.5 – 9.0	7.43 to 7.58
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	300 to 700
5	Consistency – Sludge	> 20 %	21.90 to 23.86
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	90.26 to 151.33
2	Ponght Associated Infrastructure	87.48 to 96.60

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 March 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. 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, data is not available from 08:45 AM on 16th Apr 2023 to 12:15 AM on 17th Apr 2023 and from 11:15 PM on 24th Apr 2023 to 12:00 PM on 25th Apr 2023. Also, sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. Also, 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. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
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 certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
    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 April 2023 to 30th April 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	Yes
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	Yes

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	**Scope**	**Period from 1st April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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.	Yes	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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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 April 2023 to 30th April 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	04	04	0	Jhunsi SPS cube test at jhunsi site . Cube test is acceptable for 7 Days

S.NO	Description	Instrument	1st April 2023 to 30th April 2023				Remarks
			As per IS no of test required	No of test conducted	No of test accepted	No of test rejected	
			additional sample for 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 April 2023 to 30th April 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 April 2023 to 30th April 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 Jhunsi (Phaphamau bricks) and result found acceptable as per IS
14	OPC CEMENT 43 GRADE	IS 4031	I TEST PER LOT	1	1	0	Ultratech (Third party batch report Submitted)