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
June 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;**

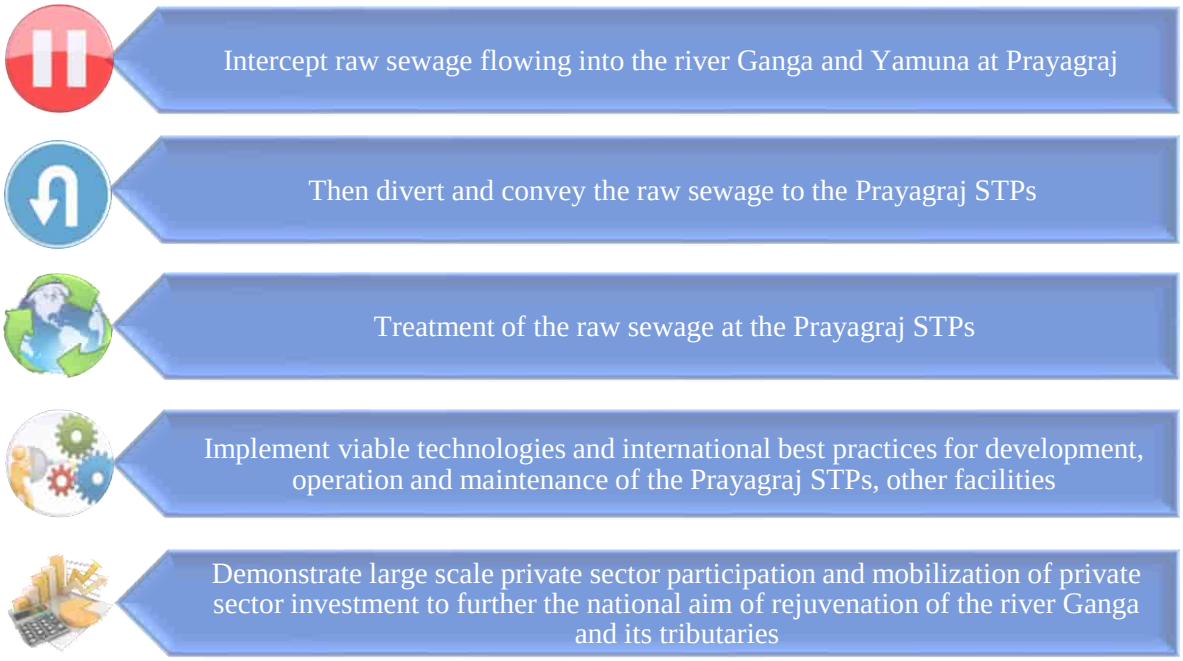

Figure 1 : Objectives of NMCG and UP JAL NIGAM

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.

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4. Project at Glance

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

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

5. Site Location

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

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

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

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

6. Project Components

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

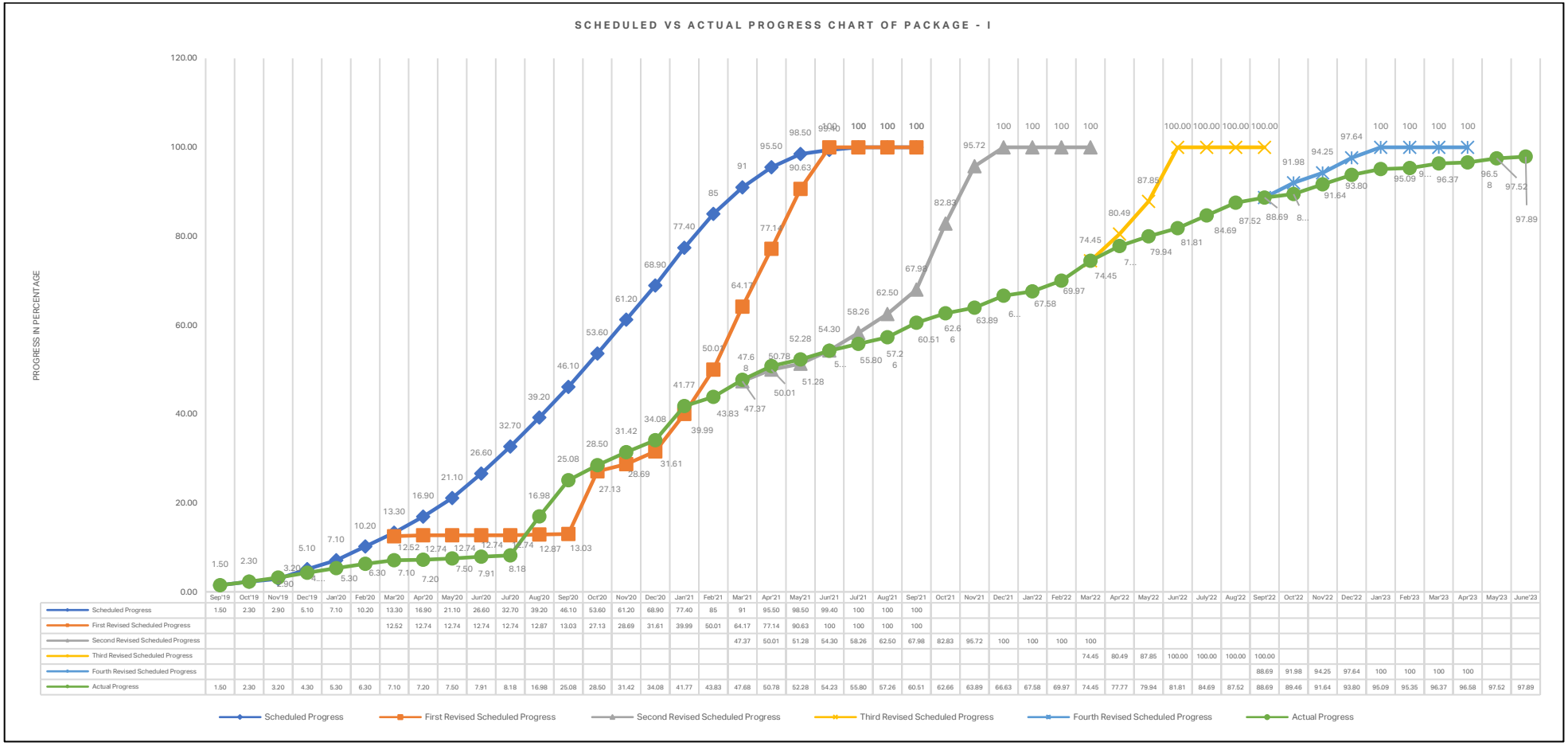
Package Number - I				
Nature of work	**Facilities**			
New construction	Design, develop, finance, construct, operate and maintain, and transfer the Package-I Facilities including three STP facilities with a proposed capacity of 42 MLD at Naini (District G), 14 MLD at Phaphamau (District F), and 16 MLD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

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

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

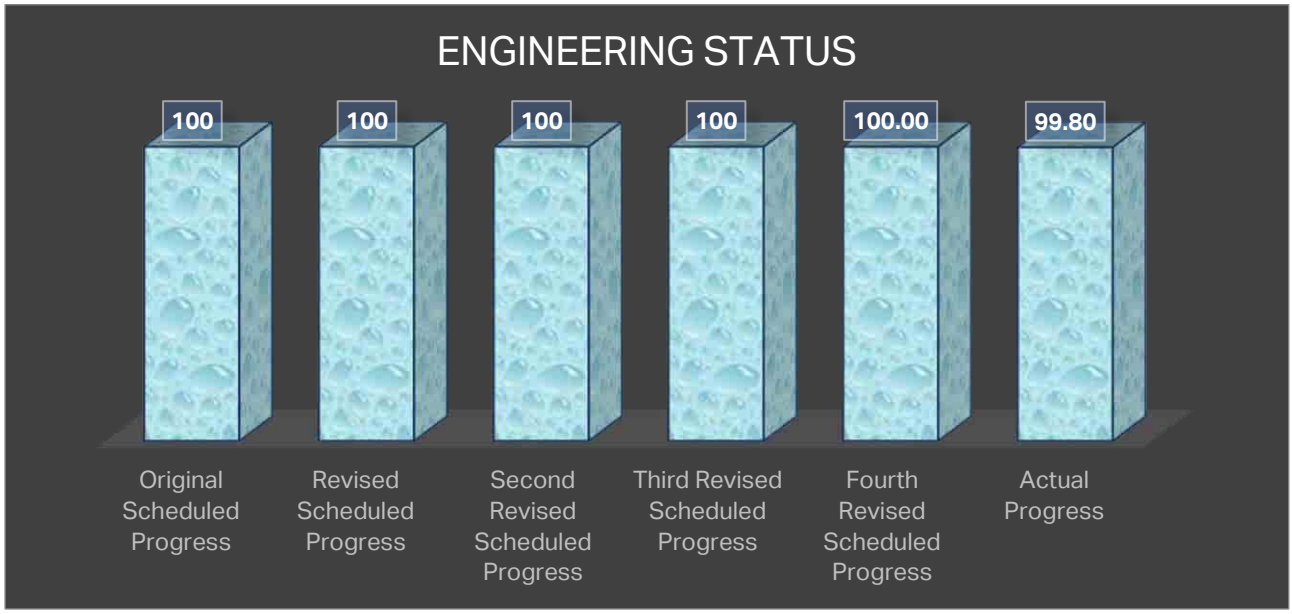
7. Status of project

7.1 Package-I Overall progress status



- **Project Engineer has provided observation on Concessionaire June'23-month MPR vide letter number AIPL/NMCG/PRAYAG/1634 on dated 15.07.2023 Therefore, status may be change after observation incorporated by Concessionaire.**

7.1.1. Engineering status



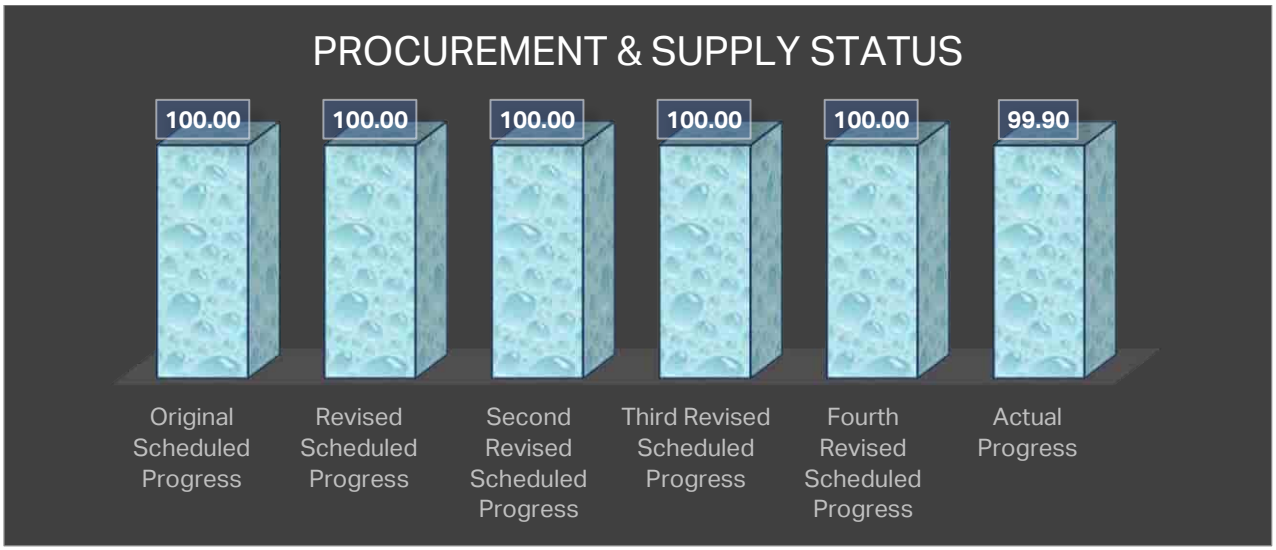
7.1.2. Engineering status as per construction plan

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
1.	**Engineering**	11-01-19	20-11-22				
2.	**Basic Engineering**	11-01-19	15-03-20				
3.	**Phaphamau & Associated Infr**	11-01-19	14-08-19				
4.	Submission of Basic Engg. Drawings/documents to UPJN	11-01-19	11-02-19	100%	100%	0%	100%
5.	Resubmission, review and Approval of Basic Engg. of drawings/documents from UPJN/PE/IIT	11-02-19	14-08-19	100%	100%	0%	100%
6.	**Naini- II & Associated Infr**	11-01-19	11-10-19				
7.	Submission of Basic Engg. Drawings/documents to UPJN	11-01-19	11-02-19	100%	100%	0%	100%

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
8.	Resubmission, review and Approval of Basic Engg. of drawings/documents from UPJN/PE/IIT	11-02-19	11-10-19	100%	100%	0%	100%
9.	**Jhunsi STP**	11-01-19	15-03-20				
10.	Submission of Basic Engg. Drawings/documents to UPJN (Based on old location)	11-01-19	11-02-19	100%	100%	0%	100%
11.	Submission of Basic Engg. Drawings/documents to UPJN (based on revised location)	10-11-19	10-12-19	100%	100%	0%	100%
12.	Resubmission, review and Approval of Basic Engg. of drawings/documents from UPJN/PE/IIT	10-12-19	15-03-20	100%	100%	0%	100%
13.	**Jhunsi associated Infrastructure**	11-01-19	15-03-20				
14.	Submission of Basic Engg. Drawings/documents to UPJN (Based on old location)	11-01-19	11-02-19	100%	100%	0%	100%
15.	Submission of Basic Engg.Drawings/documents to UPJN (based on revised location)	01-01-20	31-01-20	100%	100%	0%	100%
16.	Review and Approval of Basic Engg. of drawings/documen	25-10-19	15-03-20	100%	100%	0%	100%

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
	ts from UPJN/PE/IIT						
17.	**Detail Engineering**	01-03-20	20-11-22				
18.	**Submission of Detailed Engineering drawings to UPJN**	01-03-20	10-11-22				
19.	Mechanical	01-03-20	15-10-22	100%	100%	0%	100%
20.	Electrical and C&I	01-03-20	20-08-22	100%	100%	0%	100%
21.	Civil & Structure	01-03-20	10-11-22	100%	99%	0%	99%
22.	**Review and Approval of Engineering drawings by UPJN/PE/IIT**	01-03-20	20-11-22				
23.	Mechanical	01-03-20	30-10-22	100%	100%	0%	100%
24.	Electrical and C&I	01-03-20	05-10-22	100%	100%	0%	100%
25.	Civil	01-03-20	20-11-22	100%	99%	0%	99%

7.1.3 Procurement & Supply status

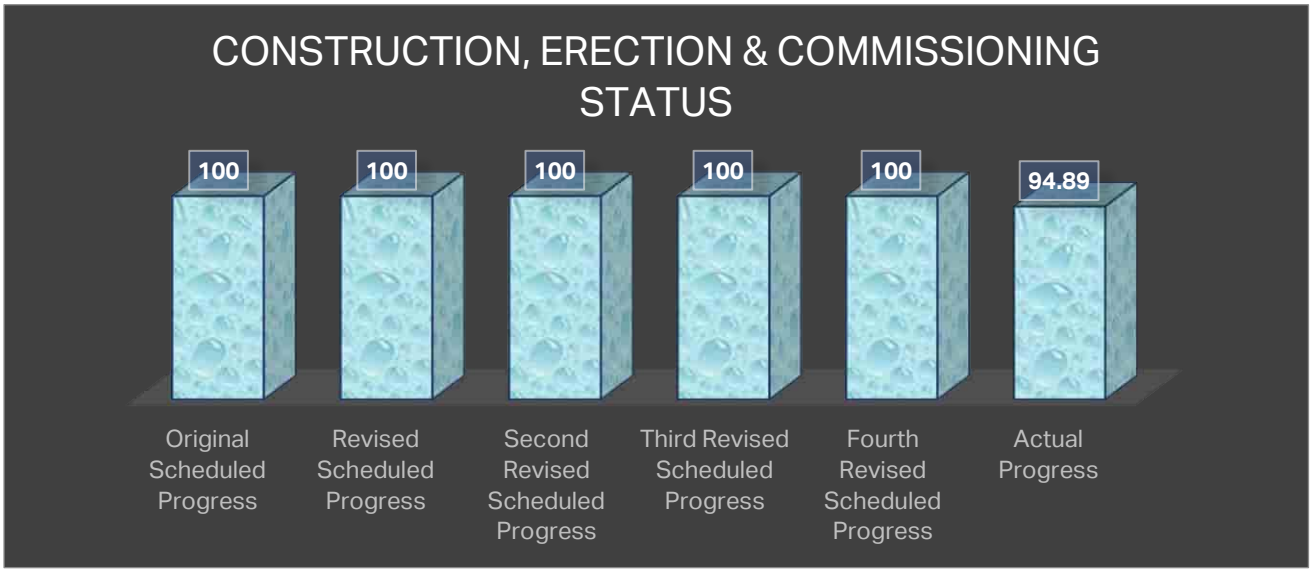


7.1.4 Procurement & Supply status as per construction plan

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
1.	**Ordering of material**	**01-03-20**	**30-09-22**				
2.	Mechanical	01-03-20	31-08-22	100%	100%	0.00%	100%
3.	Electrical and C&I	01-03-20	30-09-22	100%	100%	0.00%	100%
4.	**Manufacturing Clearance and Supplies**	**01-10-20**	**30-11-22**				
5.	**Mechanical**	**01-10-20**	**10-11-22**				
6.	Pumps	01-11-20	31-08-22	100%	100%	0.00%	100%
7.	Tube settler	01-11-20	25-04-22	100%	100%	0.00%	100%
8.	Screen (Coarse & fine)	01-12-20	25-04-22	100%	100%	0.00%	100%
9.	Grit removal system	01-12-20	25-04-22	100%	100%	0.00%	100%
10.	Blowers	01-11-20	15-10-22	100%	100%	0.00%	100%
11.	Volute press/ STE	15-01-21	31-01-22	100%	100%	0.00%	100%
12.	Diffuser	15-01-21	30-04-21	100%	100%	0.00%	100%
13.	Media/ Bio module	01-10-20	25-10-20	100%	100%	0.00%	100%
14.	Supply of pipes	15-01-21	15-10-22	100%	100%	0.00%	100%
15.	Chlorination	15-01-21	31-03-22	100%	100%	0.00%	100%
16.	Valves & Gates	15-01-21	10-11-22	100%	100%	0.00%	100%
17.	Other misc. Material	01-11-20	31-08-22	100%	100%	0.00%	100%

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
18.	**Electrical and C&I**	**01-10-20**	**30-11-22**				
19.	PLC Panel	01-11-20	20-04-22	100%	100%	0%	100%
20.	Flow Meters, Transmitters	01-11-20	20-04-22	100%	100%	0%	100%
21.	MCC Panel	28-02-21	30-09-22	100%	100%	0%	100%
22.	Analyzers	01-11-20	15-04-22	100%	100%	0%	100%
23.	HT/ LT switchgear	15-12-20	10-11-21	100%	100%	0%	100%
24.	Distribution Transformer	15-12-20	20-10-22	100%	100%	0%	100%
25.	Diesel Generators (DG's)	28-02-21	31-07-22	100%	100%	0%	100%
26.	Solar Panel	01-01-21	30-11-22	100%	100%	0%	100%
27.	CC TV	01-10-20	25-10-20	100%	100%	0%	100%
28.	HT/LT/C&I CABLES	01-11-20	20-10-22	100%	100%	0%	100%
29.	Other misc. material	01-12-20	31-10-22	100%	90.00%	0%	90%

7.1.5 Construction, Erection & Commissioning status



7.1.6 Construction, Erection & Commissioning status as per construction plan

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
1.	**Finalization & Mobilization of Execution Contractors**	01-01-20	15-04-22				
2.	Finalization & Mobilization of Civil Contractor (Phaphamau & Naini-II)	01-01-20	31-01-20	100%	100%	0.00%	100%
3.	Finalization & Mobilization of Civil Contractor (Jhunsi)	01-04-20	30-04-20	100%	100%	0.00%	100%
4.	Finalization & Mobilization of Mech. Contractor	01-01-21	18-11-21	100%	100%	0.00%	100%
5.	Finalization & Mobilization of Electrical Contractor	01-01-21	15-04-22	100%	100%	0.00%	100%
6.	Finalization & Mobilization of C&I Contractor	01-01-21	15-04-22	100%	100%	0.00%	100%
7.	Arrangement of Construction Power & Water and Site Office	01-06-20	30-06-20	100%	100%	0.00%	100%
Erection Commissioning, Trial Run and COD of Phaphamau STP (14 MLD) & Associated works							
8.	Tree cutting work	01-01-20	31-01-20	100%	100%	0.00%	100%
9.	Dismantling of existing structure	01-01-20	31-01-20	100%	100%	0.00%	100%
10.	**FCR tank unit**	01-12-19	15-01-23				

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
11.	Excavation work	01-12-19	15-03-20	100%	100%	0.00%	100%
12.	Boulder filling work	15-03-20	10-10-20	100%	100%	0.00%	100%
13.	PCC work	01-10-20	09-10-20	100%	100%	0.00%	100%
14.	RCC upto completion	01-10-20	31-10-21	100%	100%	0.00%	100%
15.	Other Misc Works	01-01-22	15-01-23	100%	100%	0.00%	100%
16.	Hydrotesting	15-01-22	25-04-22	100%	100%	0.00%	100%
17.	**Tube settler, CCT & Sludge storage Tank**	16-01-21	20-01-23				
18.	Earth work & Boulder filling work	16-01-21	28-02-21	100%	100%	0.00%	100%
19.	PCC work	01-02-21	28-02-21	100%	100%	0.00%	100%
20.	RCC upto completion	01-02-21	20-04-22	100%	100%	0.00%	100%
21.	Other Misc Works	16-04-22	20-01-23	100%	100%	0.00%	100%
22.	Hydrotesting	25-07-22	20-08-22	100%	100%	0.00%	100%
23.	**Main Process Building**	01-03-21	20-01-23				
24.	Excavation	01-03-21	10-11-21	100%	100%	0.00%	100%
25.	Rubble soling/ Stone filling work	03-07-21	20-11-21	100%	100%	0.00%	100%
26.	PCC	10-07-21	10-12-21	100%	100%	0.00%	100%
27.	Structure completion (Expect finishing works)	20-07-21	10-11-22	100%	100%	0.00%	100%
28.	Other Misc Works	10-11-22	20-01-23	100%	100%	0.00%	100%
29.	Hydrotesting	10-11-22	20-11-22	100%	100%	0%	100%
30.	**Basana Nala SPS and I&D Works**	05-11-21	20-01-23				
31.	Excavation work	05-11-21	25-11-21	100%	100%	0.00%	100%
32.	PCC	25-11-21	05-12-21	100%	100%	0.00%	100%
33.	RCC upto completion	05-12-21	15-11-22	100%	100%	0.00%	100%
34.	Hydrotesting	15-11-22	25-11-22	100%	100%	0.00%	100%
35.	Boundary wall	01-12-22	20-01-23	100%			
36.	Staff quarter	01-12-22	20-01-23	100%	50%	20%	70%
37.	Other Misc Works	15-06-22	20-01-23	100%	80%	5%	85%
38.	**Shantipuram MPS and I&D Works**	01-09-20	20-01-23				
39.	Excavation work	01-11-20	28-03-21	100%	100%	0.00%	100%
40.	PCC	28-03-21	30-04-21	100%	100%	0.00%	100%
41.	RCC work upto completion	01-04-21	30-07-22	100%	100%	0.00%	100%
42.	Other Misc Works	01-05-22	20-01-23	100%	100%	0.00%	100%
43.	Hydrotesting	10-08-22	20-08-22	100%	100%	0.00%	100%
44.	Staff quarter	01-09-20	15-01-23	100%	100%	0.00%	100%

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
45.	**Pipe laying (Rising Main & Gravity Main)**	15-11-21	10-11-22				
46.	**Rising main**	01-04-22	09-11-22				
47.	Excavation, Laying & Jointing, Backfilling/ Restoration works	01-04-22	25-10-22	100%	100%	0%	100%
48.	Hydrotesting	25-10-22	09-11-22	100%	100%	0%	100%
49.	**Gravity Main**	15-11-21	10-11-22				
50.	Excavation, Laying & Jointing, Backfilling/ Restoration works	15-11-21	25-10-22	100%	100%	0%	100%
51.	Hydrotesting	26-10-22	10-11-22	100%	100%	0%	100%
52.	Other works	01-01-20	25-01-23	100%			
53.	Site office (Temporary office)	01-01-20	31-01-20	100%	100%	0%	100%
54.	Other misc works (Boundary Wall, Road, rainwater harvesting, Land scaping etc)	01-11-22	25-01-23	100%	85%	5%	90%
55.	**Mechanical Erection- STP unit**	15-06-22	30-01-23				
56.	Pumps	01-12-22	30-01-23	100%	100%	0%	100%
57.	Lamella clarifier/ Tube settler	15-11-22	30-01-23	100%	100%	0%	100%
58.	Grit removal system	15-11-22	30-01-23	100%	100%	0%	100%
59.	Blowers & Diffuser	15-07-22	30-01-23	100%	100%	0%	100%
60.	Firefighting System	15-12-22	30-01-23	100%			
61.	Screens	10-12-22	30-01-23	100%	100%	0%	100%
62.	Piping, Valves & Gates	20-07-22	30-01-23	100%	100%	0%	100%
63.	Chlorination	20-08-22	15-10-22	100%	100%	0%	100%
64.	Media Installation/ Bio module	15-06-22	10-12-22	100%	100%	0%	100%
65.	Other misc. work	10-12-22	30-01-23	100%	90%	0%	90%
66.	**Mechanical Erection- SPS & MPS**	20-08-22	30-01-23				
67.	Pumps	15-10-22	20-01-23	100%	100%	0%	100%
68.	Screens	20-08-22	20-01-23	100%	100%	0%	100%
69.	Piping, Valves & Gates	20-08-22	20-01-23	100%	99%	0%	99%
70.	Other misc. work	20-08-22	30-01-23	100%	95%	3%	98%
71.	**Electrical and C&I- STP Unit**	20-08-22	30-01-23				
72.	Transformer Installation	01-11-22	31-12-22	100%	100%	0%	100%

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
73.	HT/LT Panel erection	01-11-22	31-12-22	100%	100%	0.00%	100%
74.	Instrumentation works	15-12-22	30-01-23	100%	90%	0%	90%
75.	CCTV	01-01-23	30-01-23	100%	85%	15%	100%
76.	Cable Laying	15-10-22	20-01-23	100%	100%	0%	100%
77.	PLC Panel & Online monitoring system	10-11-22	30-01-23	100%	70%	15%	85%
78.	Solar Panel	01-12-22	30-01-23	100%	70%	0%	70%
79.	DG Installation	20-08-22	31-08-22	100%	100%	0%	100%
80.	Other misc. work	01-12-22	30-01-23	100%	80%	10%	90%
81.	**Electrical and C&I- SPS & MPS**	20-08-22	31-01-23				
82.	Transformer Installation	20-11-22	10-01-23	100%	100%	0%	100%
83.	HT/LT Panel Erection	20-08-22	31-12-22	100%	100%	0%	100%
84.	CABLE LAYING	01-11-22	15-01-23	100%	100%	0%	100%
85.	DG Installation	15-11-22	15-12-22	100%	100%	0%	100%
86.	PLC Panel & Online monitoring system	20-11-22	30-01-23	100%	50%	40%	90%
87.	Other misc. work	20-12-22	30-01-23	100%	70%	20%	90%
88.	Commissioning of Mech., Electrical and C&I	30-01-23	31-01-23	100%	90%	0%	90%
89.	**Trial Run, Final Inspection and COD**	01-02-23	30-04-23				
90.	Trial Run and Final Inspection	01-02-23	30-04-23				
91.	COD	30-04-23	30-04-23				
92.	**Erection Commissioning, Trial Run and COD of Naini-II (42 MLD) & Associated works**						
93.	Removal of shrubs	01-01-20	28-02-20	100%	100%	0%	100%
94.	**FCR tank unit**	01-02-20	25-01-23				
95.	Excavation work	01-02-20	15-03-20	100%	100%	0%	100%
96.	Boulder filling work	26-10-20	30-11-20	100%	100%	0%	100%
97.	PCC work	01-11-20	30-11-20	100%	100%	0%	100%
98.	RCC work upto completion	01-12-20	31-12-21	100%	100%	0%	100%
99.	Other Misc Works	01-12-21	25-01-23	100%	100%	0%	100%
100.	Hydrotesting	01-03-22	15-03-22	100%	100%	0%	100%
101.	**Tube settler, CCT & Sludge storage Tank**	16-01-21	20-01-23				
102.	Earth work & Boulder filling work	16-01-21	22-01-21	100%	100%	0%	100%
103.	PCC work	19-01-21	31-01-21	100%	100%	0%	100%
104.	RCC work upto completion	01-03-21	10-05-22	100%	100%	0%	100%
105.	Other Misc Works	10-06-22	20-01-23	100%	100%	0%	100%

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
106.	Hydrotesting	20-08-22	30-08-22	100%	100%	0%	100%
107.	**Main Process Building**	01-02-21	20-01-23				
108.	Excavation	01-02-21	31-05-21	100%	100%	0%	100%
109.	Rubble soling/ Stone filling work	01-07-21	31-07-21	100%	100%	0%	100%
110.	PCC	01-07-21	31-07-21	100%	100%	0%	100%
111.	Structure completion (Expect finishing works)	01-05-21	10-05-22	100%	100%	0%	100%
112.	Other Misc Works	01-06-22	20-01-23	100%	100%	0%	100%
113.	Hydrotesting	10-05-22	30-05-22	100%	100%	0%	100%
114.	**Mawaiya SPS and I&D work**	01-02-21	15-01-23				
115.	Excavation work	01-02-21	28-02-21	100%	100%	0%	100%
116.	PCC	01-05-21	15-06-21	100%	100%	0%	100%
117.	RCC WORK upto completion	15-05-21	20-05-22	100%	100%	0%	100%
118.	Hydrotesting	20-05-22	30-05-22	100%	100%	0%	100%
119.	Boundary wall	10-08-22	15-01-23	100%	100%	0%	100%
120.	Staff quarter	01-05-22	15-01-23	100%	100%	0%	100%
121.	I&D Other misc works	01-04-22	31-08-22	100%	100%	0%	100%
122.	**Mahewaghat SPS and I&D work**	01-01-21	30-01-23				
123.	Excavation work	01-01-21	15-04-21	100%	100%	0%	100%
124.	PCC	01-01-21	15-04-21	100%	100%	0%	100%
125.	RCC Work upto completion	30-05-21	10-05-22	100%	100%	0%	100%
126.	Other finishing work	01-06-22	20-01-23	100%	90%	0%	90%
127.	Hydrotesting	10-06-22	20-06-22	100%	100%	0%	100%
128.	Boundary wall	01-05-22	20-01-23	100%	100%	0%	100%
129.	Staff quarter	26-04-22	30-12-22	100%	90%	8%	98%
130.	I&D Other misc works	01-05-22	30-01-23	100%	100%	0%	100%
131.	**Naini-II MPS and I&D work**	26-10-20	30-01-23				
132.	Excavation work	16-01-21	25-04-21	100%	100%	0%	100%
133.	PCC	16-01-21	25-04-21	100%	100%	0%	100%
134.	RCC Work upto completion	01-05-21	15-05-22	100%	100%	0%	100%
135.	Other finishing work	26-04-22	30-01-23	100%	100%	0%	100%
136.	Hydrotesting	01-06-22	15-06-22	100%	100%	0%	100%
137.	Staff quarter	26-10-20	15-12-22	100%	100%	0%	100%
138.	I&D Other misc works	26-04-22	30-01-23	100%	90%	0%	90%
139.	**Pipe laying (Rising Main & Gravity Main)**	16-01-21	20-09-22				
140.	Rising main	16-01-21	15-09-22	100%			

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
141.	Excavation, Laying & Jointing, Backfilling/ Restoration works	16-01-21	15-09-22	100%	100%	0%	100%
142.	Hydrotesting	15-07-22	15-09-22	100%	100%	0%	100%
143.	**Gravity Main**	01-03-21	20-09-22				
144.	Excavation, Laying & Jointing, Backfilling/ Restoration works	01-03-21	05-09-22	100%	100%	0%	100%
145.	Hydrotesting	10-09-22	20-09-22	100%	100%	0%	100%
146.	Other works	01-01-20	30-01-23	100%			
147.	Site office (Temporary office)	01-01-20	31-01-20	100%	100%	0%	100%
148.	Other misc works (Boundary Wall, Road, rain water harvesting, Land scaping etc)	01-03-21	30-01-23	100%	90%	0%	90%
149.	**Mechanical Erection- STP unit**	01-04-22	30-01-23				
150.	Pumps	01-09-22	15-09-22	100%	100%	0%	100%
151.	Lamella clarifier/ Tube settler	01-05-22	15-09-22	100%	100%	0%	100%
152.	Grit removal system	01-06-22	15-09-22	100%	100%	0%	100%
153.	Piping, Valves & Gates	26-04-22	15-10-22	100%	100%	0%	100%
154.	Firefighting System	01-09-22	20-10-22	100%			
155.	Chlorination	01-09-22	30-09-22	100%	100%	0%	100%
156.	Blowers & Diffuser	01-05-22	30-09-22	100%	100%	0%	100%
157.	screens	01-06-22	30-06-22	100%	100%	0%	100%
158.	Media Installation/ Bio module	01-04-22	30-09-22	100%	100%	0%	100%
159.	Other misc. work	01-09-22	30-01-23	100%	90%	10%	100%
160.	**Mechanical Erection- SPS & MPS**	10-06-22	30-01-23				
161.	Pumps	15-07-22	30-09-22	100%	100%	0%	100%
162.	Screens	01-07-22	31-07-22	100%	100%	0%	100%
163.	Piping, Valves & Gates	10-06-22	31-10-22	100%	99%	0%	99%
164.	Other misc. work	01-07-22	30-01-23	100%	95%	3%	98%
165.	**Electrical and C&I- STP Unit**	01-05-22	30-01-23				
166.	Transformer Installation	01-07-22	31-08-22	100%	100%	0%	100%
167.	HT/LT panel erection	15-05-22	20-09-22	100%	100%	0%	100%

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
168.	PLC Panel & Online monitoring system	16-08-22	31-12-22	100%	90%	0%	90%
169.	Instrumentation works	01-07-22	30-11-22	100%	90%	5%	95%
170.	CCTV	01-12-22	30-01-23	100%			
171.	CABLE LAYING	01-05-22	30-10-22	100%	100%	0%	100%
172.	Solar Panel	15-06-22	30-11-22	100%	100%	0%	100%
173.	Other misc. work	01-09-22	30-01-23	100%	95%	0%	95%
174.	**Electrical and C&I- SPS & MPS**	01-06-22	30-06-22				
175.	Transformer Installation	01-07-22	30-09-22	100%	100%	0%	100%
176.	HT/LT panel erection	01-07-22	30-09-22	100%	100%	0%	100%
177.	CABLE LAYING	01-07-22	30-10-22	100%	100%	0%	100%
178.	DG Installation	01-07-22	30-07-22	100%	100%	0%	100%
179.	PLC Panel & Online monitoring system	01-09-22	30-01-23	100%	90%	0%	90%
180.	Other misc. work	15-07-22	30-01-23	100%	99%	0%	99%
181.	Commissioning of Mech., Electrical and C&I	30-01-23	31-01-23	100%	90%	0%	90%
182.	**Trial Run, Final Inspection and COD**	01-02-23	30-04-23				
183.	Trial Run and Final Inspection	01-02-23	29-04-23				
184.	COD	30-04-23	30-04-23				
185.	**Erection Commissioning, Trial Run and COD of Jhunsi STP (16 MLD) & Associated works**						
186.	**FCR tank unit**	01-10-20	30-01-23				
187.	Excavation work	01-10-20	25-10-20	100%	100%	0%	100%
188.	Boulder filling work	26-10-20	29-10-20	100%	100%	0%	100%
189.	PCC work	30-10-20	30-10-20	100%	100%	0%	100%
190.	RCC up to completion	31-10-20	15-10-21	100%	100%	0%	100%
191.	Other finishing work	01-03-22	30-01-23	100%	75%	0%	75%
192.	Hydro testing	01-04-22	30-04-22	100%	100%	0%	100%
193.	**Tube settler, CCT & Sludge storage Tank**	01-01-21	30-01-23				
194.	Earth work & Boulder filling work	01-01-21	15-02-21	100%	100%	0%	100%
195.	PCC work	16-02-21	28-02-21	100%	100%	0%	100%
196.	RCC up to completion	01-03-21	05-04-22	100%	100%	0%	100%
197.	Other finishing work	01-02-22	30-01-23	100%	75%	0%	75%
198.	Hydro testing	05-04-22	20-04-22	100%	100%	0%	100%
199.	**Main Process Building**	01-06-21	30-01-23				
200.	Excavation & Column	01-06-21	16-06-21	100%	100%	0%	100%

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
201.	Rubble soling/ Stone filling work	16-06-21	26-06-21	100%	100%	0%	100%
202.	PCC	26-06-21	30-06-21	100%	100%	0%	100%
203.	Structure completion (Except finishing works)	01-07-21	10-11-22	100%	100%	0%	100%
204.	Other finishing work	01-05-22	30-01-23	100%	80%	0%	80%
205.	Hydro testing	01-08-22	10-09-22	100%	75%	10%	85%
206.	**Shastri bridge SPS and I&D work**	16-04-22	30-01-23				
207.	Excavation work	16-04-22	28-04-22	100%	100%	0%	100%
208.	PCC	28-04-22	02-05-22	100%	100%	0%	100%
209.	RCC up to completion	02-05-22	10-12-22	100%	85%	5%	90%
210.	Other finishing work	01-11-22	30-01-23	100%			
211.	Hydro testing	10-12-22	20-12-22	100%			
212.	Boundary wall	15-12-22	30-01-23	100%			
213.	Staff quarter	20-11-22	30-01-23	100%	60%	20%	80%
214.	Other Misc. works	15-11-22	30-01-23	100%			
215.	**Jhunsi MPS and I&D work**	01-09-20	30-01-23				
216.	Excavation work	01-08-21	15-10-21	100%	100%	0%	100%
217.	PCC	16-10-21	20-10-21	100%	100%	0%	100%
218.	RCC up to completion	21-10-21	30-04-22	100%	100%	0%	100%
219.	Other finishing work	01-06-22	30-01-23	100%	75%	0%	75%
220.	Hydro testing	01-07-22	15-07-22	100%	100%	0%	100%
221.	Staff quarter	01-09-20	30-11-22	100%	95%	3%	98%
222.	Other Misc. works	01-07-22	30-01-23	100%	65%	5%	70%
223.	**Pipe laying (Rising Main & Gravity Main)**	15-11-21	04-01-23				
224.	Rising main	15-11-21	25-12-22	100%			
225.	Excavation, Laying & Jointing, Backfilling/ Restoration works	15-11-21	15-12-22	100%	90%	0%	90%
226.	Hydro testing	05-12-22	25-12-22	100%	70%	10%	80%
227.	**Gravity Main**	16-01-22	04-01-23				
228.	Excavation, Laying & Jointing, Backfilling/ Restoration works	16-01-22	20-12-22	100%	90%	0%	90%
229.	Hydro testing	15-12-22	04-01-23	100%		85%	85%
230.	Other works	01-02-20	30-01-23	100%			

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
231.	Site office (Temporary office)	01-02-20	30-04-20	100%	100%	0%	100%
232.	Other misc. works (Boundary Wall, Road, rain water harvesting, Land scraping etc.)	01-12-22	30-01-23	100%			
233.	**Mechanical Erection- STP unit**	01-04-22	30-01-23				
234.	Pumps	20-11-22	20-01-23	100%	70	0%	70%
235.	Lamella clarifier/ Tube settler	01-04-22	30-10-22	100%	90%	10%	100%
236.	Fire fighting System	01-01-23	30-01-23	100%			
237.	Chlorination	20-11-22	30-01-23	100%	70%	20%	90%
238.	Grit removal system	01-12-22	30-01-23	100%	100%	0%	100%
239.	Blowers & Diffuser	01-07-22	31-12-22	100%	75%	0%	75%
240.	Screens	20-11-22	31-12-22	100%	100%	0%	100%
241.	Piping, Valves & Gates	01-07-22	25-01-23	100%	70%	15%	85%
242.	Media Installation/ Bio module	15-04-22	25-12-22	100%	85%	0%	85%
243.	Other misc. work	01-12-22	30-01-23	100%	50%	10%	60%
244.	**Mechanical Erection- SPS & MPS**	20-10-21	30-01-23				
245.	Pumps	20-11-22	20-01-23	100%	50%	20%	70%
246.	Screens	01-12-22	15-01-23	100%	70%	0%	70%
247.	Piping, Valves & Gates	20-10-21	30-01-23	100%	50%	10%	60%
248.	Other misc. work	01-12-22	30-01-23	100%	50%	0%	50%
249.	**Electrical and C&I- STP Unit**	01-09-22	31-01-23				
250.	Transformer Installation	25-10-22	31-01-23	100%	100%	0%	100%
251.	HT/LT panel erection	01-09-22	20-01-23	100%	100%	0%	100%
252.	PLC Panel & Online monitoring system	01-11-22	30-01-23	100%	20%	0%	20%
253.	Instrumentation works	01-11-22	30-01-23	100%			
254.	CCTV	01-11-22	30-01-23	100%			
255.	Cable laying	01-11-22	30-01-23	100%	85%	0%	85%
256.	DG Installation	01-09-22	25-01-23	100%	100%	0%	100%
257.	Solar Panel	15-11-22	30-01-23	100%	100%	0%	100%
258.	Other misc. work	01-12-22	30-01-23	100%	30%	20%	50%
259.	**Electrical and C&I- SPS & MPS**	01-11-22	31-01-23				
260.	Transformer Installation	01-11-22	30-01-23	100%			

Sr. No.	Work description	Scheduled Start Date	Scheduled End Date	Scheduled Completion (In %)	Completion up to previous month (In %) (A)	This month Completion (In%) (B)	Total Completion (In %) (A+B)
261.	HT/LT Panel erection	15-11-22	30-01-23	100%	50%	0%	50%
262.	Cable laying	15-11-22	30-01-23	100%	50%	0%	50%
263.	DG Installation	15-11-22	30-01-23	100%			
264.	PLC Panel & Online monitoring system	15-11-22	30-01-23	100%			
265.	Other misc. work	15-11-22	30-01-23	100%	30%	20%	50%
266.	Commissioning of Mech., Electrical and C&I	31-01-23	31-01-23	100%			
267.	**Trial Run, Final Inspection and COD**	01-02-23	30-04-23				
268.	Trial Run and Final Inspection	01-02-23	30-04-23				
269.	COD	30-04-23	30-04-23				

7.1.7 Physical construction Activities in June'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 June'2023.

Sr. No.	Site Visit & Meeting with UPJN / NMCG / PWPL	Date	Attendees	Description
1.	Site inspection of Naini-II STP	3-Jun-23	Mr. Gaurav Gupta Mr. Gaurav Pandey	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
2.	Site inspection of Phaphamau STP	5-Jun-23	Mr. Gaurav Pandey Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
3.	Site inspection of Naini-II STP	10-Jun-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
4.	Site inspection of Phaphamau STP	12-Jun-23	Mr. Gaurav Pandey Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
5.	Site inspection of Phaphamau STP	17-Jun-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
6.	Site inspection of Jhunsi STP	21-Jun-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing E&M activities of plant
7.	Site inspection of Naini-II STP	26-Jun-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing E&M activities and operation and maintenance of plant
8.	Site inspection of Jhunsi STP	26-Jun-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M activities of plant

10. Photos of Meetings / Site Visits and Activities

PACKAGE - I

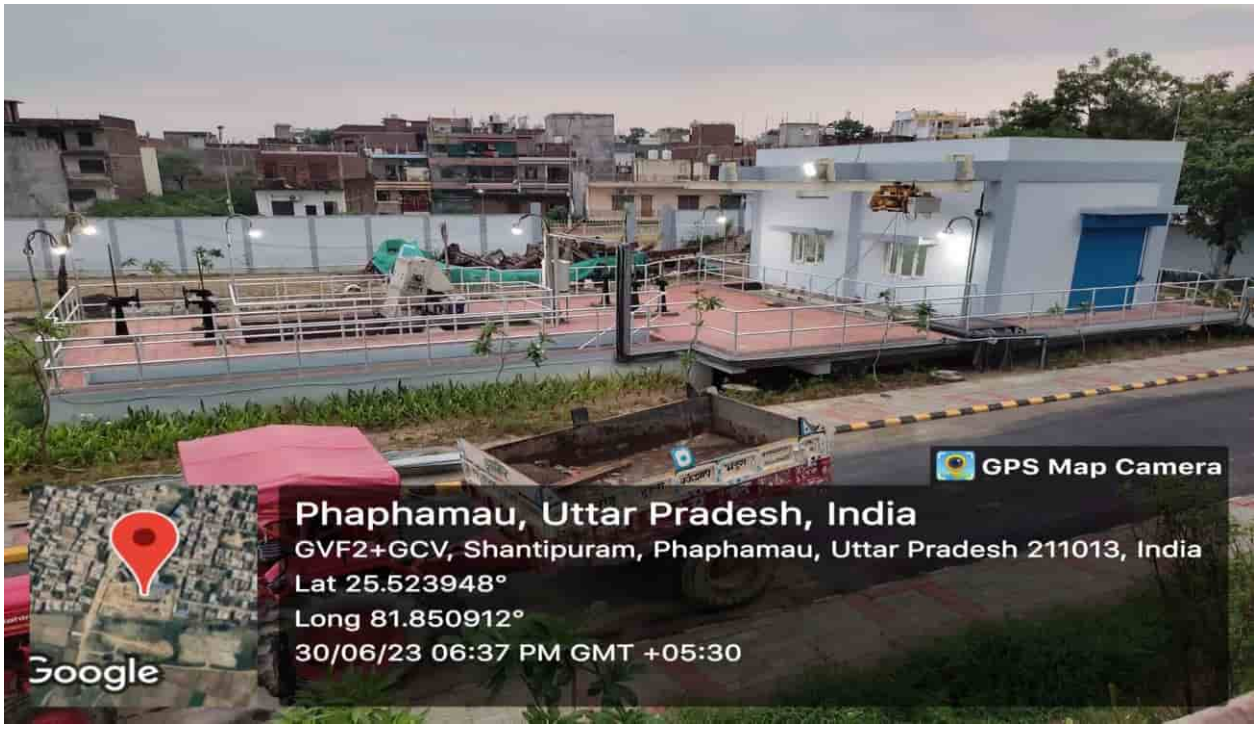
PHAPHAMAU FACILITY

FCR: Current status (Functional)

STP campus – Road and Finishing work status

PHAPHAMAU FACILITY

Process Building: Current status (Functional)



Shantipuram MPS: Current status (Functional)

NAINI-II FACILITY

FCR– Current status (Functional)

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

NAINI-II FACILITY

Tube settler– Current status (Functional)

Process Building – Current status (Functional)

JHUNSI FACILITY

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

Tube settler– Current Status (Functional)

JHUNSI FACILITY

FCR – Finishing & E&M work is under progress

Shastri Bridge SPS – Construction as well as E&M work is in 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/1616	Project Engineer Services for The Development of Sewage Treatment Plants (STPs) at Jhunsi, Naini and Phaphamau, rehabilitation of existing STPs & Associated Infrastructure and Operation & Maintenance of all assets for 15 years in Prayagraj, Uttar Pradesh under Hybrid Annuity based PPP mode	5-Jun-23	NMCG, New Delhi
2.	AIPL/NMCG/PRAYAG/1617	The Development of Sewage Treatment Plants (STPq) at Jhunsi, Naini and Phaphamau, rehabilitation of existing STPs & Associated Infrastructure and Operation & Maintenance of all assets for 15 years in Prayagraj, Uttar Pradesh under Hybrid Annuity based PPP mode	5-Jun-23	NMCG, New Delhi
3.	AIPL/NMCG/PRAYAG/1618	Submission of O & M Monthly Progress report for the month of March, 2023 of Package – II	5-Jun-23	S.E.-2 Circle - UPJN
4.	AIPL/NMCG/PRAYAG/1619	Regarding Notice for 08th Milestone for Naini-II facility under Package-I.	8-Jun-23	S.E.-2 Circle - UPJN
5.	AIPL/NMCG/PRAYAG/1620	Regarding Notice for 08th Milestone for Phaphamau facility under Package-I.	8-Jun-23	S.E.-2 Circle - UPJN
6.	AIPL/NMCG/PRAYAG/1621	Submission of O & M Monthly Progress report for the month of April, 2023 of Package – II	9-Jun-23	S.E.-2 Circle - UPJN
7.	AIPL/NMCG/PRAYAG/1622	Submission of O & M Monthly Progress report for the month of May, 2023 of Package – II	12-Jun-23	S.E.-2 Circle - UPJN

Sr. No.	PE Transmittal/ Ref No	Description	Outward Date	To (Organization)
8.	AIPL/NMCG/PRAYAG/1623	Submission of O & M Monthly Progress report for the month of May, 2023 of Package – III	16-Jun-23	S.E.-2 Circle - UPJN
9.	AIPL/NMCG/PRAYAG/1624	Regarding the submission of MPR of May'23 and compliance report.	17-Jun-23	Prayagraj water private limited
10.	AIPL/NMCG/PRAYAG/1625	Inspection reports for Phaphamau facility & Naini-II facility	22-Jun-23	S.E.-2 Circle - UPJN
11.	AIPL/NMCG/PRAYAG/1626	Inspection Reports of Package-II facilities	22-Jun-23	S.E.-2 Circle - UPJN
12.	AIPL/NMCG/PRAYAG/1627	Submission of O & M Monthly Progress report for the month of May, 2023 of Package – II	22-Jun-23	S.E.-2 Circle - UPJN
13.	AIPL/NMCG/PRAYAG/1628	Inspection Reports of Package-III facilities	22-Jun-23	S.E.-2 Circle - UPJN
14.	AIPL/NMCG/PRAYAG/1629	Submission of O & M Tax Invoice of 8th quarter (March, 2023 – May , 2023) of Package – II.	28-Jun-23	S.E.-2 Circle - UPJN
15.	AIPL/NMCG/PRAYAG/1630	Inspection Report of Jhunsi Facility	30-Jun-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.	PWPL/UPJN/PRAYAGRAJ/SITE /910	Regarding the submission of MPR of Apr'23 and compliance report for Package-I.	7-Jun-23	Prayagraj water private limited
2.	PWPL/UPJN/PRAYAGRAJ/O&M/647	Submission of revised O & M Monthly Progress report for the month of April, 2023 of Package – II – R	8-Jun-23	Prayagraj water private limited
3.	PWPL/UPJN/PRAYAGRAJ/O&M/645	Submission of O & M Monthly Progress report for the month of May, 2023 of Package – II	8-Jun-23	Prayagraj water private limited
4.	PWPL/UPJN/PRAYAGRAJ/O&M/648	Submission of O & M Monthly Progress report for the month of May, 2023 of Package – III	9-Jun-23	Prayagraj water private limited
5.	PWPL/UPJN/PRAYAGRAJ/SITE /911	Regarding completion of balance work of Naini-II & Phaphamau facility under Package-I	17-Jun-23	Prayagraj water private limited
6.	PWPL/UPJN/PRAYAGRAJ/SITE /912	Regarding shutdown of Naini-II facility under Package-I.	17-Jun-23	Prayagraj water private limited
7.	69/PWPL/(PRAYAGRAJ)/25	Regarding issuance of COD for Phaphamau facility under package-I	19-Jun-23	S.E.-2 Circle (Rural)-UPJN
8.	68/PWPL/(PRAYAGRAJ)/24	Regarding issuance of COD for Naini-II facility under package-I	19-Jun-23	S.E.-2 Circle (Rural)-UPJN
9.	1330/W-9/141	Regarding issuance of COD for Naini-II facility under package-I	20-Jun-23	Chief Engineer
10.	PWPL/UPJN/PRAYAGRAJ/O&M/651	Submission of O & M Tax Invoice of 8th quarter (March, 2023 – May , 2023) of Package – II.	23-Jun-23	PM-1, UPJN

Sr. No.	PWPL / UPJN Transmittal reference number	Description	Date	From
11.	PWPL/UPJN/PRAYAGRAJ/O&M/652	Regarding O & M Payment of Quarter -8 i.e., March – 23 to May -23 for Package – II facilities for the STP Project at Prayagraj under HAM based PPP Model .	23-Jun-23	PM-1, UPJN
12.	505/PWPL/(PRAYAGRAJ)/78	Regarding deploying of responsible person for O&M of STPs.	25-Jun-23	PM-1, UPJN
13.	PWPL/UPJN/PRAYAGRAJ/O&M/654	Regarding deploying of responsible person for O&M of STPs.	26-Jun-23	Prayagraj water private limited
14.	PWPL/UPJN/PRAYAGRAJ/O&M/655	Regarding O&M Payment of Quarter – 8 i.e., Mar-22 to May-23 for Package II facilities for the STP Project at Prayagraj under HAM based PPP model.	29-Jun-23	Prayagraj water private limited

13. EHS targets, Achievement & compliance report for the month of June 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	Completed

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	-	-	-	0
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	-	-	-	0
11.	Water tanker	-	-	2	2
12.	Auto level	-	-	1	1
13.	Mixing machine	-	-	2	2
14.	Vibrator	-	-	4	4
15.	Tractor	1	-	1	2
16.	Concrete Chipping Machine	-	-	1	1
17.	Welding Machine	1	-	3	4
18.	Grinding Machine	1	1	4	6
19.	Gas cutting set	-	-	2	2
20.	Chain saw machine	-	-	-	0
21.	Chain Block	-	-	1	1
22.	RM 800	-	-	-	0
23.	Plywood cutting machine	-	-	6	6
24.	Steel cutting machine	-	-	4	4

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

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
	Civil Work		
1	At Shastri Bridge SPS, progress of civil construction works is very slow. As per current status, casting work for 18th lift out 19 is in progress. After casting of all lifts, construction works for super structure and other civil works for the SPS will start.	Casting work for slab at 89.0 m is complete. Currently, Slab shuttering is complete and bar binding work is in progress for slab casting at 95.0m level then construction of one more slab over this will be started.	Slab at 95 level is completed and column work above this level is under progress
2	For Shastri Bridge SPS, staff quarter, which is to be constructed in campus of Jhunsi STP, is under construction but progress is very slow.	Plastering and finishing work in progress	Finishing work is under progress.
3	At Shastri Bridge SPS, construction of boundary wall and approach road is pending.	Not started yet	Boundary wall is not feasible as per the site conditions and fencing will be done post rainy season.
4	At all 13 Interception and diversion points, arrangement for conveying sewage from existing nalla to the civil structure is pending.	Tapping of 04 nallas out of 12 is completed and balance is in progress. It is also required to provide permanent arrangement for conveying sewage from existing nalla to the civil structure so that it doesn't get broken in monsoon season.	12 Nallas are tapped completely, and balance 01 Nos tapping is pending due to rise in level of water in the river same will be initiated after feasibility.
5	At all 13 Interception and diversion points, repairing work of civil structure which is damaged due to flood is pending.	Repairing work for 9 out of 13 I&Ds is completed till date.	Repairing of the 13 Nos I&Ds is completed.
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.

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 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 works are in progress	Installation of doors and windows is completed whereas finishing works are in progress
9	At Jhunsi MPS, landscaping and site development work is pending.	Work is in progress	Will be completed post approval of Change of scope for Jhunsi facility
10	At Jhunsi MPS, installation of permanent type display/sign boards is pending.	Not started yet	Work is under progress
11	At Jhunsi MPS, permanent arrangement for water supply is pending.	Work is in progress	Completed
12	At Jhunsi MPS, land filling work is pending	Work is pending	Will be completed post approval of Change of scope for Jhunsi facility
13	At Jhunsi MPS, construction of loading and unloading bay is pending.	As informed by Concessionaire, it will be started after land filling work	Will be completed post approval of Change of scope for Jhunsi facility
14	At Jhunsi STP, rectification for discrepancy regarding outlet launder of tube settlers is pending.	Completed	Completed
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	Completed
16	At Jhunsi STP, construction of boundary wall is pending.	Not started yet	Will be completed post approval of Change of scope for Jhunsi facility
17	At Jhunsi STP, land filling work is pending.	Work is pending	Will be completed post approval of Change of scope for Jhunsi facility

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
18	At Jhunsi STP, construction works for Road & Drain are pending.	As informed by Concessionaire, it will be started after land filling work	Will be completed post approval of Change of scope for Jhunsi facility
19	At Jhunsi STP, fixing of hand railing for some parts of STP are pending.	Completed	Completed
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	Will be completed post approval of Change of scope for Jhunsi facility
21	At Jhunsi STP, finishing works for various units of STP are pending.	Work is in progress	Completed
22	At Jhunsi STP, water proofing over the roof for all units is pending.	Completed	Completed
23	At Jhunsi STP, laying of effluent pipeline is pending.	Work is pending for last stretch near river. It is required to provide permanent arrangement near last point of effluent discharge to avoid cutting nearby land.	Work is under progress
24	At Jhunsi STP, construction of brick wall for providing partition in SDU room is pending.	Completed	Completed
25	At Jhunsi STP, epoxy coating in all water retaining structures is pending.	Completed	Completed
26	At Jhunsi STP, arrangements for rainwater harvesting are pending.	Not started yet	Will be completed post approval of Change of scope for Jhunsi facility
27	At Jhunsi STP, painting work for some civil structures is pending.	Work is in progress	Work is under progress
28	At Jhunsi STP, construction of supports for pipeline from MPS to PTU and PTU to CCT is pending	Work is in progress	Work is under progress
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	Will be completed post approval of Change of scope for Jhunsi facility

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
30	At Jhunsi STP, leakage rectification is required in outer wall at grit chamber	Work is in progress	Work is under progress
31	Flow test of gravity main from Aughar Nalla to Shastri Bridge SPS is pending	Work is in progress	Completed
32	Laying of rising main laying for 150 meter of 700 mm dia is pending.	Completed	Completed
33	Hydro test of rising main for approx. 1800 meter is pending.	Work is in progress	Completed
34	Construction of 3 manholes from Aughar Nalla to Shastri Bridge SPS are pending.	Manhole construction is completed but cover frame and cover installation is pending	Completed
E&M Work			
1	At Shastri Bridge SPS, all E&M works are pending as civil works are not completed yet.	Installation of mechanical screens are completed but commissioning is pending and 07 no. gates out of 07 no. are installed without spindle, head stock and bracket. Installation of pumps, flowmeter and erection of header line is completed. Remaining E&M works are not started yet as civil works are not completed yet.	E&M work of all the I&Ds is completed and 12 Nos IDs are tapped. Only 01 Nos is pending due to rise in the level of river.
2	At all 13 Interception and diversion points, all E&M works are pending.	11 out of 13 is completed.	Completed
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	Work is in progress
4	At Jhunsi MPS, testing & commissioning of submersible pumps is pending.	Work is in progress	Work is in progress
5	At Jhunsi MPS, testing & commissioning of mechanical screens is pending.	Work is in progress.	Work is in progress

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
6	At Jhunsi MPS, installation of chute for screw conveyor of mechanical screens is pending.	Not started yet	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.	Work is in progress
8	At Jhunsi MPS, installation of penstocks and spindles for all gates is pending.	Completed	Completed
9	At Jhunsi MPS, installation of pressure gauges in discharge lines of all pumps is pending.	Completed	Completed
10	At Jhunsi MPS, installation of pressure transmitter in header line of pumps is pending.	Installation is completed but commissioning is pending.	Work is in progress
11	At Jhunsi MPS, installation of differential level transmitter for mechanical screen is pending.	Installation is completed but calibration is pending.	Work is in progress
12	At Jhunsi MPS, installation of level transmitter in raw sewage sump is pending.	Installation is completed but calibration is pending.	Work is in progress
13	At Jhunsi MPS, installation of outlet flowmeter is completed but it is not working.	Installation is completed but calibration is pending.	Work is in progress
14	At Jhunsi MPS, installation of fire alarm and fire-fighting system is not started yet.	Installation of fire alarm system is completed but commissioning is pending. Installation of firefighting system is pending.	Work is in progress
15	At Jhunsi MPS, installation of CCTV system is not started yet.	Not started yet	Work is in progress
16	At Jhunsi MPS, work for ventilation system is pending.	Completed	Completed
17	At Jhunsi MPS, installation of EOT is pending.	Completed	Completed
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.	Completed	Completed

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
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	Work is in progress
22	At Jhunsi MPS, leakage test for sluice gates/valves is pending.	Work is in progress	Work is in progress
23	At Jhunsi MPS, installation of permanent lights for complete unit are pending.	Completed	Completed
24	At Jhunsi STP, installation of chute for screw conveyor of mechanical screens is pending.	Not started yet	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 in progress
27	At Jhunsi STP, cable laying, power connections for both mechanical screens and electrical actuator are pending	Completed	Completed
28	At Jhunsi STP, testing & commissioning of grit removal system is pending. Pipeline laying for scum removal is pending.	Completed. At the time of visit it was found that one grit removal unit was not in operation but since sewage received in STP was more that 8 MLD, both units must remain in operation all the time.	Work is in 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

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
30	At Jhunsi STP, cable laying, power connections for both grit removal units are pending.	Completed	Completed
31	At Jhunsi STP, pipeline laying for scum removal is pending.	Not Started yet	Work is in progress
32	At Jhunsi STP, E&M works of screw conveyor and other arrangements for grit removal units is pending	Completed but unit is not taken in operation yet. Installation of chute is pending. Also, access for grit collection is not provided.	Work is in 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. At the time of visit blowers were not found in operation.	Work is in progress
34	At Jhunsi STP, discharge piping, cable laying, power connections, erection of air dryer, testing & commissioning of air compressor is pending.	Work is in progress	Work is in progress
35	At Jhunsi STP, installation, cable laying, power connections and laying of associated pipelines of poly dosing system are pending.	Erection & commissioning is completed but unit is not taken in operation yet. Modification works for agitators in poly tanks are pending.	Work is in 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.	Completed	Completed
39	At Jhunsi STP, installation of HMI screens and testing of VFD panels for aeration blowers is pending.	Completed	Completed
40	At Jhunsi STP, work for cooling water line to air line from aeration blowers is pending.	Completed	Completed

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
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. Also, laying of pipelines for lean flow for FCRs and commissioning of flowmeters is pending. At the time of visit it was found that one FCR tank was found in operation but since sewage received in STP was more that 8 MLD, both units must remain in operation all the time.	Work is in progress
42	At Jhunsi STP, installation of I-nuts and diffusers in FCR tanks is pending.	Completed for 3 out of 4 tanks and other work is in progress	Work is in progress
43	At Jhunsi STP, installation of plants for FCR tanks are pending.	Not Started yet	Work is in progress
44	At Jhunsi STP, installation of bio-modules for FCR tanks are pending. Currently, the bio-modules are not available at site as they are sent to OEM's manufacturing unit for some rectification work.	Completed for 3 out of 4 tanks and other work is in progress	Work is in progress
45	At Jhunsi STP, installation of chlorination system and laying of related pipelines is pending.	Installation completed and commissioning is pending.	Work is in progress
46	At Jhunsi STP, installation of booster pumps for chlorination booster pump and laying of related pipelines is pending.	Completed	Completed
47	At Jhunsi STP, electrical works related to chlorination system are pending.	Completed	Completed
48	At Jhunsi STP, E&M works for leak detection system and neutralization tower are pending.	Work is in progress	Work is in progress
49	At Jhunsi STP, commissioning of sludge dewatering system is pending	Testing work from OEM is pending but unit is not taken into operation yet. Also, access for movement of sludge collection trolley is not provided yet.	Work is in progress

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
50	At Jhunsi STP, commissioning of lime dosing system is pending	Not Started yet	Work is in progress
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.	Completed	Completed
53	At Jhunsi STP, installation, cable laying, power connections of dewatering feed pumps are pending.	Completed but one pump set is under maintenance due to problem in motor.	Work is in progress
54	At Jhunsi STP, laying of sludge pipeline from dewatering feed pumps to dewatering building is pending.	Completed	Completed
55	At Jhunsi STP, installation of chimney for DG as per CPCB norms is pending.	Work is in progress	Work is in progress
56	At Jhunsi STP, construction of earthing pits is pending.	Work is in progress	Work is in progress
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.	Completed	Completed
59	At Jhunsi STP, cable dressing, cable connection, testing & commissioning of transformers is pending.	Completed	Completed
60	At Jhunsi STP, cable dressing, cable connection, testing & commissioning of main MCC panel is pending.	Completed	Completed
61	At Jhunsi STP, cable dressing, cable connection, testing & commissioning of APFC panels is pending.	Completed	Completed

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
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.	Completed	Completed
64	At Jhunsi STP, installation of differential level transmitter for mechanical screen is pending.	Installation completed but calibration is pending.	Work is in progress
65	At Jhunsi STP, installation of inlet and outlet analysers is pending.	Work is in progress	Work is in progress
66	At Jhunsi STP, installation of DO analysers for FCR tanks is pending.	Not Started yet	Work is in progress
67	At Jhunsi STP, installation of chlorine analyser at the outlet of STP is pending	Installation completed but calibration is pending.	Work is in progress
68	At Jhunsi STP, installation of outlet flowmeter is pending.	Installation completed but calibration is pending.	Work is in progress
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.	Completed.	Completed
71	At Jhunsi STP, C&I cable laying for complete site is pending.	Work is in progress	Work is in progress
72	At Jhunsi STP, erection & commissioning works of PLC system are pending.	Work is in progress	Work is in progress
73	At Jhunsi STP, erection & commissioning works of SCADA system are pending.	Work is in progress	Work is in progress
74	At Jhunsi STP, work for service water pipe at all points is pending.	Work is in progress	Work is in progress
75	At Jhunsi STP, testing & commissioning, cable laying, power connections for treated effluent pumps is pending.	Completed	Completed

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
76	At Jhunsi STP, testing & commissioning of EOTs for all units is pending.	Completed	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 in progress
78	At Jhunsi STP, work for providing potable water reservoir and related pipeline is pending for all units.	Not Started yet	Work is in 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.	Work is in progress	Work is in progress
80	At Jhunsi STP, works for set-up of laboratory are pending. Laboratory instruments are still not available at site.	Work is in progress	Work is in progress
81	At Jhunsi STP, installation of permanent lights inside and outside the units for complete site are pending.	Work is in progress	Work is in progress
82	At Jhunsi STP, installation of asset management system is not started yet.	Not Started yet	Work is in progress
83	At Jhunsi STP, work for ventilation system is pending.	Work is in progress	Work is in progress
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.	Not started yet	If any problem arise during the O&M, same will be taken care.

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 26th Jun 2023.		Concessionaire action taken as on date 04th July 2023
86	At Jhunsi STP, leakage test for sluice gates/valves is pending.	Work is in progress	Completed

Note: M/s. PWPL reply is under observation, it will be change according to July 2023 inspection report provided by Project engineer.

2. NAINI-II STP AND ASSOCIATE INFRASTRUCTURE

2.1 Action taken report

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 21st Jun 2023	Concessionaire action taken as on date 04th July 2023
	Civil Works	
1	At Mawaiya SPS, installation of doors and windows, finishing works are pending.	Completed
2	At Mawaiya SPS, landscaping and site development work is pending.	Completed
3	For Mahewaghat SPS, painting and finishing works of staff quarter which is to be constructed in campus of Naini-II STP, is in progress.	Staff quarter finishing work is under progress
4	At Mahewaghat SPS, landscaping and site development work is pending.	Completed
5	At Naini-II STP, landscaping work for the site is pending.	Completed
6	At Naini-II STP, arrangements for rainwater harvesting are pending	Work is under Progress
7	At Naini-II STP, rectification for problem of water logging in area between FCR and Tube settler tank is in progress.	Pump for the same is procured but installation of the same is under progress
	E&M Work	
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.	Will be taken care during O&M
2	At Khakrauni Nalla I&D, installation of scour valve is pending.	Cannot be installed as per the site condition, Material has already procured if any situation arise same will be installed during O&M

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 21st Jun 2023	Concessionaire action taken as on date 04th July 2023
3	At Mawaiya SPS, commissioning of differential level transmitter for mechanical screens is pending.	Under Progress.
4	At Mawaiya SPS, commissioning of harmonic filter panel is pending.	Under Progress
5	At Mawaiya SPS, installation of fire-fighting system is pending.	Work is under Progress
6	At Mawaiya SPS, VFD for pump no. 4 is not working.	Work is under Progress
7	At Mahewaghat SPS, installation of fire-fighting system is pending.	Work is under Progress
8	At Mahewaghat SPS, commissioning of harmonic filter panel is pending.	Work is under Progress
9	At Naini-II MPS, installation of partition gate in wet well is pending.	Concessionaire has procured the material and same will be installed during O&M if required
10	At Naini-II MPS, installation of fire-fighting system is pending.	Work is under Progress
11	At Naini-II STP, commissioning of differential level transmitter for mechanical screens is pending.	Completed
12	12. At Naini-II STP, commissioning of harmonic filter panel is pending.	Work is under Progress
13	At Naini-II STP, calibration of inlet and outlet analyzers is completed but it is not showing correct values of parameters.	Work is under Progress
14	At Naini-II STP, calibration of DO analyzers for FCR tanks is completed but it is not showing correct values of parameters.	Work is under Progress
15	At Naini-II STP, installation of EOT for PTU is pending.	Concessionaire has procured the material and same will be installed during O&M if required
16	At Naini-II STP, laying of scum line form grit chamber to sludge tank is pending	Completed

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 21st Jun 2023	Concessionaire action taken as on date 04th July 2023
17	At Naini-II STP, commissioning of solar power plant for 800 KW is completed as per CA however work for solar power plant of extra capacity is in progress	Work is under Progress
18	At Naini-II STP, work for installation of PLC/SCADA system is pending as communication as per approved I/O list is in progress.	Completed
19	At Naini-II STP, rectification of observations regarding SCADA system are required which were given during visit. Concessionaire is required to provide report generation regarding KPIs, flow and running hours as per the method discussed at site.	Completed
20	At Naini-II STP, installation of firefighting system with fire water pipe network and firefighting arrangements within the key structures/buildings including fire alarm System is pending.	Work is under Progress
21	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.	Work is under Progress
22	At Naini-II STP, installation of asset management system is pending.	Work is under Progress
23	At Naini-II STP, installation of automatic portable samplers at inlet and outlet of STP is pending.	Completed for Outlet and for Inlet is under progress

Note: M/s. PWPL reply is under observation, it will be change according to July 2023 inspection report provided by Project engineer.

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-Jun-23	36100	36.1	7.42	7.81	170	22	300	44	287	24	NA	600	0.3	25	1200000	Plant availability is 100%
2-Jun-23	35570	35.57	7.49	7.87	165	25	312	48	292	27	NA	500	0.2	25.2	1400000	Plant availability is 100%
3-Jun-23	34990	34.99	7.39	7.82	155	20	296	36	284	22	NA	400	0.2	25.5	1700000	Plant availability is 100%
4-Jun-23	36290	36.29	7.44	7.49	160	25	336	40	305	26	NA	700	0.3	24.9	1400000	Plant availability is 100%
5-Jun-23	38410	38.41	7.35	7.74	165	16	292	48	272	21	NA	500	0.2	25.6	1200000	Plant availability is 100%
6-Jun-23	38250	38.25	7.36	7.7	160	20	300	40	278	18	NA	600	0.3	25.8	1700000	Plant availability is 100%
7-Jun-23	36350	36.35	7.42	7.76	170	18	304	48	276	17	NA	400	0.3	24.3	1400000	Plant availability is 100%
8-Jun-23	36540	36.54	7.35	7.67	165	19	312	36	272	20	NA	700	0.3	25.7	1200000	Plant availability is 100%
9-Jun-23	37150	37.15	7.26	7.38	155	22	328	40	280	22	NA	600	0.3	26.1	1400000	Plant availability is 100%
10-Jun-23	35030	35.03	7.24	7.48	175	24	340	48	302	25	NA	500	0.2	25.4	1700000	Plant availability is 100%
11-Jun-23	36830	36.83	7.35	7.59	170	22	348	36	320	23	NA	400	0.3	24.8	1400000	Plant availability is 100%
12-Jun-23	36040	36.04	7.18	7.27	165	25	316	44	284	28	NA	600	0.2	26.1	1700000	Plant availability is 100%
13-Jun-23	35410	35.41	7.57	7.72	175	28	320	48	302	30	NA	500	0.3	25.9	1200000	Plant availability is 100%
14-Jun-23	34650	34.65	7.22	7.38	160	21	328	44	270	25	NA	400	0.3	24.7	1100000	Plant availability is 100%
15-Jun-23	35120	35.12	7.24	7.42	155	22	312	48	272	26	NA	700	0.2	24.1	1400000	Plant availability is 100%
16-Jun-23	33510	33.51	7.35	7.65	160	21	320	40	275	19	NA	500	0.3	23.2	1700000	Plant availability is 100%
17-Jun-23	12020	12.02	7.14	7.37	165	23	304	44	268	18	NA	600	0.3	24.3	1100000	Plant availability is 100%
18-Jun-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Plant was shutdown 17/6/23 at 08:30pm due to outflow line work.
19-Jun-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20-Jun-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21-Jun-23	26960	26.96	7.04	7.28	170	20	356	48	311	25	NA	400	0.3	24.7	1200000	Plant availability is 100%
22-Jun-23	37700	37.7	7.43	7.82	160	21	340	48	308	19	NA	500	0.3	25.3	1400000	Plant availability is 100%
23-Jun-23	36470	36.47	7.68	7.94	165	15	332	44	302	16	NA	400	0.2	24.9	1700000	Plant availability is 100%
24-Jun-23	40460	40.46	7.65	7.98	155	21	304	48	264	24	NA	700	0.3	25.6	1200000	Plant availability is 100%
25-Jun-23	38840	38.84	7.51	7.82	160	14	312	40	279	18	NA	600	0.2	25.3	1300000	Plant availability is 100%
26-Jun-23	37750	37.75	7.7	7.92	165	15	328	44	307	20	NA	500	0.3	23.9	1200000	Plant availability is 100%
27-Jun-23	38620	38.62	7.51	7.86	160	22	320	48	302	21	NA	700	0.3	25.9	1700000	Plant availability is 100%
28-Jun-23	39540	39.54	7.55	7.94	155	18	316	40	296	20	NA	500	0.2	24.5	1300000	Plant availability is 100%
29-Jun-23	41330	41.33	7.4	7.9	160	16	312	44	291	22	NA	600	0.2	25.8	1400000	Plant availability is 100%
30-Jun-23	55890	55.89	7.21	7.8	155	21	352	48	264	25	NA	700	0.3	24.1	1200000	Plant availability is 100%
Average	**32724**	**32.72**	**6.65**	**6.91**	**146.50**	**18.53**	**288.00**	**39.47**	**264.00**	**20.03**	**NA**	**493.33**	**0.24**	**22.55**	**1250000**	

Source: Logbook of Laboratory at Sewage Treatment Plant

3. PHAPHAMAU STP AND ASSOCIATE INFRASTRUCTURE

3.1 Action taken report

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 19th Jun 2023	Concessionaire action taken as on date 04th July 2023
	Civil Works	
1	At Basna Nalla SPS, construction of boundary wall and approach road is pending	Work is under progress
2	At Basna Nalla SPS, epoxy coating in wet well is pending.	We have used the SRC cement during the construction so epoxy coating on structure is not required
3	At Basna Nalla SPS, staff quarter, which is to be constructed in campus of Phaphamau STP, is under construction shuttering work for casting of slab for Second floor is in progress.	Finishing Work is under progress
4	At Basna Nalla SPS, installation of door & windows for PLC room are pending.	Completed
5	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.	Completed
6	At Basna Nalla SPS, construction of loading and unloading bay is pending.	Work is under progress
7	At Basna Nalla SPS, landscaping and site development work is pending.	Landscaping work is not required as per site conditions
8	At Shantipuram MPS, landscaping and site development work is pending.	Completed
9	At Phaphamau STP, landscaping and development work for complete site is pending.	Completed.

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 19th Jun 2023	Concessionaire action taken as on date 04th July 2023
10	At Phaphamau STP, arrangements for rainwater harvesting are pending.	Completed
	E&M Works	
1	At Shantipuram and Basna Nalla Interception and diversion points, provide the gate at the inlet of I&D after manual screen for the avoiding of silt collection in manhole and rising main at the time of flood.	Will be taken care during the course of O&M
2	At Basna Nalla SPS, installation of sluice gate in partition wall in downstream side of screens is pending.	Concessionaire has procured the gate and same will be installed during O&M if required
3	At Basna Nalla SPS and Phaphamau STP, commissioning of harmonic filter panel is pending.	Work is under progress
4	At Phaphamau STP, calibration of inlet and outlet analyzers is completed but it is not showing correct values of parameters.	Work is under progress
5	At Phaphamau STP, calibration of DO analyzers for FCR tanks is completed but it is not showing correct values of parameters.	Work is under progress
6	At Phaphamau STP, installation of solar plant of 77.1 KW capacity but solar plant of 110 KW is to be installed at STP as per CA.	Completed
7	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. Concessionaire is required to provide communication as per approved I/O list.	Work is under progress

Sr. No	Observation Raised by Project Engineer vide Letter no AIPL/NMCG/PRAYAG/1625 as on 19th Jun 2023	Concessionaire action taken as on date 04th July 2023
8	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 KPIs, running hours of equipment and flow is pending in SCADA system as per requirement.	Completed
9	At Phaphamau STP, installation of EOT for PTU area is pending.	EOT has been procured and will be installed as per requirement during O&M period.
10	At Phaphamau STP, installation of firefighting system with fire water pipe network and firefighting arrangements within the key structures/buildings including fire alarm System is pending.	Work is under progress
11	11. At Phaphamau STP, installation of asset management system is not started yet.	Work is under progress
12	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.	If any problem arise during the O&M, same will be taken care.
13	At Phaphamau STP, installation of automatic portable samplers at inlet and outlet of STP is pending.	Completed for Outlet and for Inlet is under progress

Note: M/s. PWPL reply is under observation, it will be change according to July 2023 inspection report provided by Project engineer.

3.2 KPI Report

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

Date	Daily Feed Quantity MLD (Design-10 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design-<9)	Final pH (Design-6.5 to 8.0)	Inlet BOD (Design-<250 mg/l)	Final BOD (Design -<20 mg/l)	Inlet COD (Design-<500 mg/l)	Final COD (Design-<50 mg/l)	Inlet TSS (Design-<500 mg/l)	Final TSS (Design <30 mg/l)	Inlet (Design - NA)	Final (Design -<1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Jun-23	13590	13.59	7.25	7.76	155	20	368	36	321	17	NA	400	0.2	24.09	1700000	Plant availability is 100%
2-Jun-23	14070	14.07	7.31	7.77	165	18	364	32	318	18	NA	500	0.3	24.73	1400000	Plant availability is 100%
3-Jun-23	14570	14.57	7.24	7.76	160	16	372	36	316	17	NA	600	0.2	23.67	1700000	Plant availability is 100%
4-Jun-23	13480	13.48	7.31	7.78	155	18	368	40	318	18	NA	500	0.3	24.8	1400000	Plant availability is 100%
5-Jun-23	14140	14.14	7.33	7.75	160	15	360	32	317	14	NA	600	0.2	23.92	1700000	Plant availability is 100%
6-Jun-23	14380	14.38	7.36	7.78	165	18	356	36	318	18	NA	400	0.3	23.89	1300000	Plant availability is 100%
7-Jun-23	14580	14.58	7.32	7.75	160	16	360	40	321	16	NA	500	0.2	23.73	1400000	Plant availability is 100%
8-Jun-23	15270	15.27	7.34	7.78	165	14	364	32	323	15	NA	600	0.3	23.22	1700000	Plant availability is 100%
9-Jun-23	14420	14.42	7.32	7.76	160	16	368	40	315	17	NA	400	0.2	24.19	1300000	Plant availability is 100%
10-Jun-23	14530	14.53	7.34	7.78	170	13	360	32	325	20	NA	700	0.3	24.73	1400000	Plant availability is 100%
11-Jun-23	15060	15.06	7.35	7.76	165	16	368	36	315	22	NA	600	0.2	23.52	1700000	Plant availability is 100%
12-Jun-23	15650	15.65	7.37	7.78	160	15	364	32	317	14	NA	400	0.3	23.84	1300000	Plant availability is 100%
13-Jun-23	14340	14.34	7.35	7.8	170	14	368	36	322	13	NA	600	0.2	24.16	1700000	Plant availability is 100%
14-Jun-23	12650	12.65	7.36	7.79	160	15	360	32	325	15	NA	500	0.3	23.47	1400000	Plant availability is 100%
15-Jun-23	13890	13.89	7.36	7.85	165	14	368	40	316	16	NA	400	0.2	24.71	1300000	Plant availability is 100%
16-Jun-23	14590	14.59	7.34	7.83	160	16	364	36	318	15	NA	600	0.3	23.22	1700000	Plant availability is 100%
17-Jun-23	13820	13.82	7.36	7.86	170	15	360	40	316	12	NA	500	0.2	24.19	1400000	Plant availability is 100%
18-Jun-23	15010	15.01	7.37	7.9	165	18	368	32	317	14	NA	400	0.3	23.94	1300000	Plant availability is 100%
19-Jun-23	14180	14.18	7.41	7.92	160	16	364	36	312	12	NA	600	0.2	24.1	1700000	Plant availability is 100%
20-Jun-23	15410	15.41	7.4	7.83	170	18	360	32	315	15	NA	500	0.3	24.13	1400000	Plant availability is 100%
21-Jun-23	14310	14.31	7.42	7.94	165	16	368	36	314	12	NA	400	0.2	23.84	1700000	Plant availability is 100%
22-Jun-23	14660	14.66	7.4	7.95	160	15	364	40	318	16	NA	600	0.3	24.28	1400000	Plant availability is 100%
23-Jun-23	15610	15.61	7.35	7.85	170	14	360	32	316	15	NA	700	0.2	23.14	1700000	Plant availability is 100%
24-Jun-23	14870	14.87	7.4	7.89	165	16	368	40	312	12	NA	400	0.3	24.2	1300000	Plant availability is 100%
25-Jun-23	15880	15.88	7.41	7.85	160	15	372	44	315	15	NA	600	0.2	23.15	1400000	Plant availability is 100%
26-Jun-23	15440	15.44	7.43	7.88	165	14	360	36	310	13	NA	400	0.3	23.52	1300000	Plant availability is 100%
27-Jun-23	14910	14.91	7.4	7.85	160	16	368	32	314	14	NA	700	0.2	24.8	1700000	Plant availability is 100%
28-Jun-23	17470	17.47	7.38	7.91	170	18	360	40	312	12	NA	400	0.3	23.22	1300000	Plant availability is 100%
29-Jun-23	18110	18.11	7.41	7.85	165	20	356	32	310	11	NA	600	0.2	23.1	1700000	Plant availability is 100%
30-Jun-23	19150	19.15	7.43	7.9	155	17	360	36	313	14	NA	700	0.3	23.13	1400000	Plant availability is 100%
Average	**14934.67**	**14.93**	**7.36**	**7.83**	**163.17**	**16.07**	**364.00**	**35.87**	**316.63**	**15.07**	**NA**	**526.67**	**0.25**	**23.87**	**1493333.33**	

Source: Logbook of Laboratory at Sewage Treatment Plant.

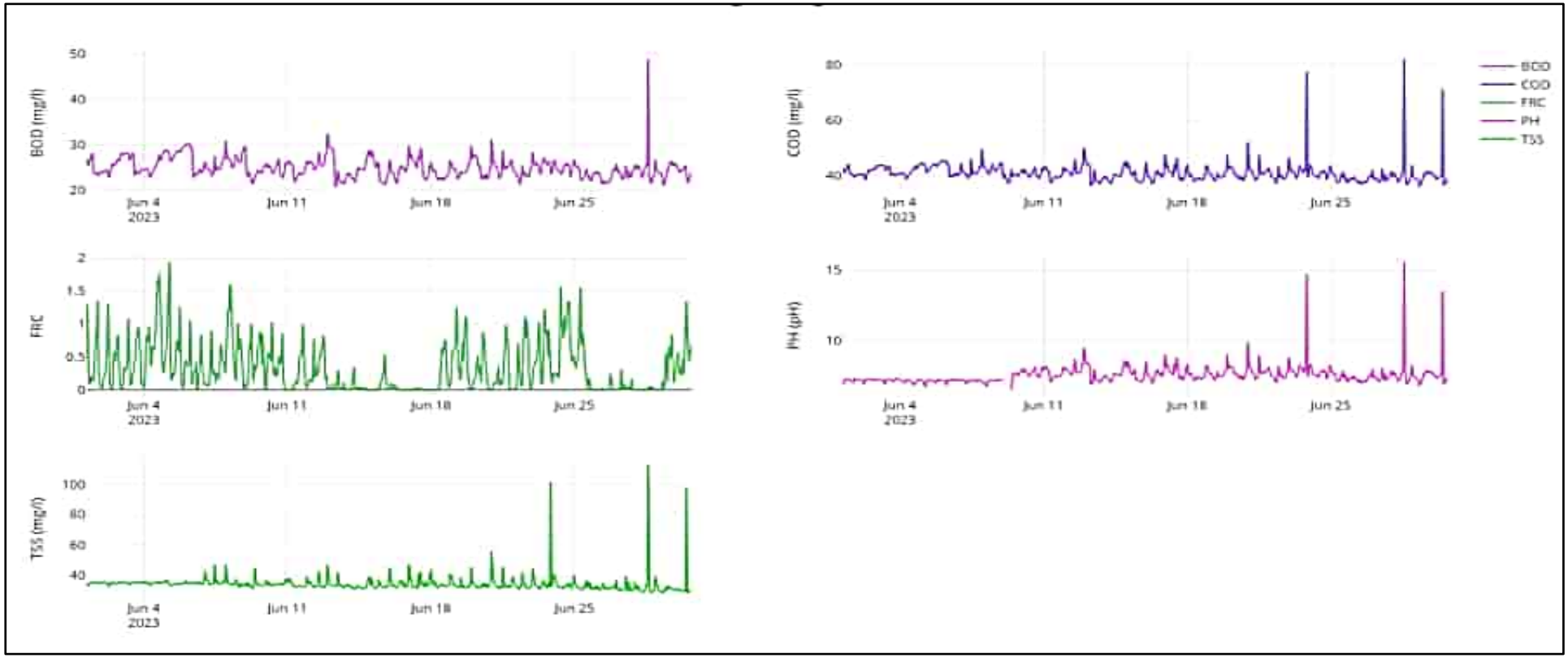
ANNEXURE-II

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.

2. FRC sensor calibration is pending.

Naini-I STP, 80 MLD STP at Prayagraj

INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design- 80 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design- <9)	Final pH (Design- 6.5 to 8.0)	Inlet BOD (Design- <250 mg/l)	Final BOD (Design - <30 mg/l)	Inlet COD (Design- <500 mg/l)	Final COD (Design - <50 mg/l)	Inlet TSS (Design- <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-Jun-23	103210	103.21	7.01	7.25	130	25	328	42	298	36	NA	600	0.2	25.3	1200000	Plant availability is 100%
2-Jun-23	107390	107.39	6.97	7.23	140	26	324	40	305	35	NA	700	0.3	24.9	1300000	Plant availability is 100%
3-Jun-23	105520	105.52	7.18	7.28	130	25	320	42	297	36	NA	400	0.3	25.1	1200000	Plant availability is 100%
4-Jun-23	101860	101.86	7	7.17	125	24	332	41	297	35	NA	400	0.2	24.8	1100000	Plant availability is 100%
5-Jun-23	105790	105.79	7.28	7.18	135	26	330	44	304	33	NA	800	0.3	24.7	1700000	Plant availability is 100%
6-Jun-23	96520	96.52	7.26	7.23	145	25	326	40	307	34	NA	600	0.2	24.8	1300000	Plant availability is 100%
7-Jun-23	101060	101.06	7.07	7.17	130	24	330	43	290	36	NA	500	0.3	24.66	1400000	Plant availability is 100%
8-Jun-23	108510	108.51	7.01	7.15	125	25	335	44	298	35	NA	700	0.2	25.02	1700000	Plant availability is 100%
9-Jun-23	108380	108.38	7.11	7.55	130	24	324	40	295	34	NA	400	0.2	24.65	1200000	Plant availability is 100%
10-Jun-23	101150	101.15	7.02	7.62	125	25	316	44	291	36	NA	600	0.3	25.05	1400000	Plant availability is 100%
11-Jun-23	97220	97.22	7.03	7.64	130	23	326	40	304	34	NA	500	0.2	25.1	1300000	Plant availability is 100%
12-Jun-23	97470	97.47	7.05	8.06	130	24	330	43	301	36	NA	800	0.3	24.79	1700000	Plant availability is 100%
13-Jun-23	101700	101.7	7.1	7.67	135	24	324	40	298	35	NA	600	0.3	24.53	1400000	Plant availability is 100%
14-Jun-23	99400	99.4	7.06	7.64	130	25	334	42	299	34	NA	500	0.2	24.7	1200000	Plant availability is 100%
15-Jun-23	102060	102.06	7.09	7.58	125	23	324	40	295	32	NA	700	0.3	24.32	1400000	Plant availability is 100%
16-Jun-23	104760	104.76	7.03	8.05	120	24	312	44	288	37	NA	800	0.2	25.09	1700000	Plant availability is 100%
17-Jun-23	102070	102.07	7.18	7.76	125	26	330	46	302	36	NA	600	0.3	24.7	1100000	Plant availability is 100%
18-Jun-23	101040	101.04	7.01	7.62	130	25	326	38	294	33	NA	800	0.3	25.07	1200000	Plant availability is 100%
19-Jun-23	99510	99.51	7.04	7.58	125	24	320	40	289	32	NA	500	0.2	24.6	1400000	Plant availability is 100%
20-Jun-23	101750	101.75	7.14	7.53	130	29	332	48	308	45	NA	600	0.3	24.5	1100000	Plant availability is 100%
21-Jun-23	103410	103.41	7.06	7.68	135	25	324	40	300	35	NA	500	0.2	24.61	1300000	Plant availability is 100%
22-Jun-23	107270	107.27	7.12	7.82	125	24	320	44	295	38	NA	700	0.3	24.29	1400000	Plant availability is 100%
23-Jun-23	106570	106.57	7.2	7.85	130	25	326	40	305	34	NA	800	0.2	25.03	1200000	Plant availability is 100%
24-Jun-23	88150	88.15	7.23	7.74	140	24	330	36	310	36	NA	700	0.2	24.8	1400000	Plant availability is 100%
25-Jun-23	97550	97.55	7.05	7.48	135	24	326	40	302	33	NA	600	0.3	25.1	1700000	Plant availability is 100%
26-Jun-23	102220	102.01	7.01	7.19	120	23	320	38	295	31	NA	500	0.2	24.8	1300000	Plant availability is 100%
27-Jun-23	104220	104.22	7.15	7.88	120	28	328	42	304	37	NA	400	0.3	25	1100000	Plant availability is 100%
28-Jun-23	109520	109.5	7.33	7.51	130	24	320	40	322	33	NA	600	0.2	24.88	1400000	Plant availability is 100%
29-Jun-23	117340	117.34	7.64	7.48	120	25	348	41	326	31	NA	700	0.3	24.3	1300000	Plant availability is 100%
30-Jun-23	129540	129.54	7.22	7.43	125	26	332	40	315	30	NA	800	0.2	23.59	1200000	Plant availability is 100%
Average	103738.00	103.73	7.12	7.53	129.17	24.80	326.57	41.40	301.13	34.73	NA	613.33	0.25	24.77	1343333.33	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken report

Month of Site Inspection	June 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. Vijay, 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 31st May 2023, 7th June 2023, 13th June 2023, 19th June 2023, and following observations were made after action taken by Concessionaire on May 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	96.52 to 108.51
2	Gaughat MPS	98.52 to 110.12
3	Chacharnalla SPS	32.15 to 42.05

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	23 to 26 mg/l
2	TSS – Effluent	< 50 mg/l	32 to 37 mg/l
3	pH – Effluent	6.5 – 9.0	7.15 to 8.06
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 800 MPN/100 ml
5	Consistency – Sludge	> 20 %	24.32 to 25.30 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 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	34.92 to 58.95
2	Naini I Associated Infrastructure	28.16 to 79.48

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 May 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.
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. Currently, the variation in between value of parameters recorded by online analyzers in SCADA reports and value of parameters in laboratory is more than the permissible limit given in 'Guidelines for OCEMS' by CPCB.
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. In addition to this, value of residual chlorine is not shown correctly for complete month. 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 problems at the earliest.

   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 is required to 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 specially during night time 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. Furthermore, NMCG has 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. 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.
12. For 60 MLD, all grit removal units are working.
13. For 20 MLD, all grit removal units are working.
14. 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.
15. 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. Concessionaire is required to increase sludge withdrawal time, sludge feeding time of Digester.
16. Telescopic valves of Primary Settling Tanks are not working.
17. 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.
18. In Aeration Unit of 60 MLD, all surface aerators are in working condition. It is recommended to install DO analyzer in this tank also for better monitoring.
19. Aeration tank of 20 MLD is in operation. Air distribution is not proper in this tank as excess air is coming from some due to problem in diffusers. Commissioning of DO analyzer is not completed yet.
20. All Aeration blowers are working.
21. All Final Settling Tanks are working.
22. It is suggested to install torque switches in all clarifiers for having better protection against excessive load on scrapper.
23. 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.

24. 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.
25. In RSPH unit of 20 MLD, both Pumps are working.
26. Both chlorinators are in working condition. Both booster pumps are working.
27. Leak absorption system is working.
28. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
29. Both thickeners are in working condition. Installation of actuators for drain valves is pending. Installation & calibration of flowmeter in lines from blending tank to thickener is completed.
30. All thickened sludge transfer pumps are working.
31. In TEPH, all pumps are OK for operation for Dandi and Naini Area.
32. For TEPH panel, modification of room is completed but panel erection is not started yet as per the electrical norms.
33. Both DGs are in operation. Installation work of chimney for DGs as per CPCB norms is pending.
34. Sludge dewatering unit is in operation. Poly preparation unit is in operation.
35. All filtrate pumps are working.
36. 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.
37. Both dewatering feed pumps are under maintenance. Currently, submersible pump is being used for transferring sludge from digesters to dewatering building.
38. For sludge drying beds, it is required to check filter media and gravels as water is not percolating from SDBs. Excavation was done in one SDB and it was found that there is no media in it, pipe beneath the gravel is completely choked, gravel is completely choked with sludge. Also, smaller size of gravel is required to be filled in SDBs. All these problems need to be rectified so that SDB can operate for a greater number of days as currently SDBs are filled in 3-4 days only. Similarly, other SDBs must also be checked.
39. All Digesters are working.
40. Heat exchangers, sludge recirculation pumps for all digesters are working.
41. In compressor room, all six compressors are working.
42. Both Gas holders are working.
43. Gas flare is working.
44. H2S scrubber unit is working. Analyzers fitted at inlet & outlet unit are working.
45. 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.
46. 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.
47. 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.

48. Rehabilitation works for tube well unit are pending.
49. Landscaping work of the plant must be improved.
50. 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 do the modifications as discussed.
51. Painting of all units from inside is in progress.
52. All CCTV cameras are working.
53. 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.
54. 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) All HNC pumps are working.
    c) All submersible pumps are in working condition.
    d) Both mechanical screens of HNC 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.
    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.

55. 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) One DG set is OK for operation. One DG set is in Maintenance.
    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 as per good industry practices, rectification of this problem is required.

56. 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:

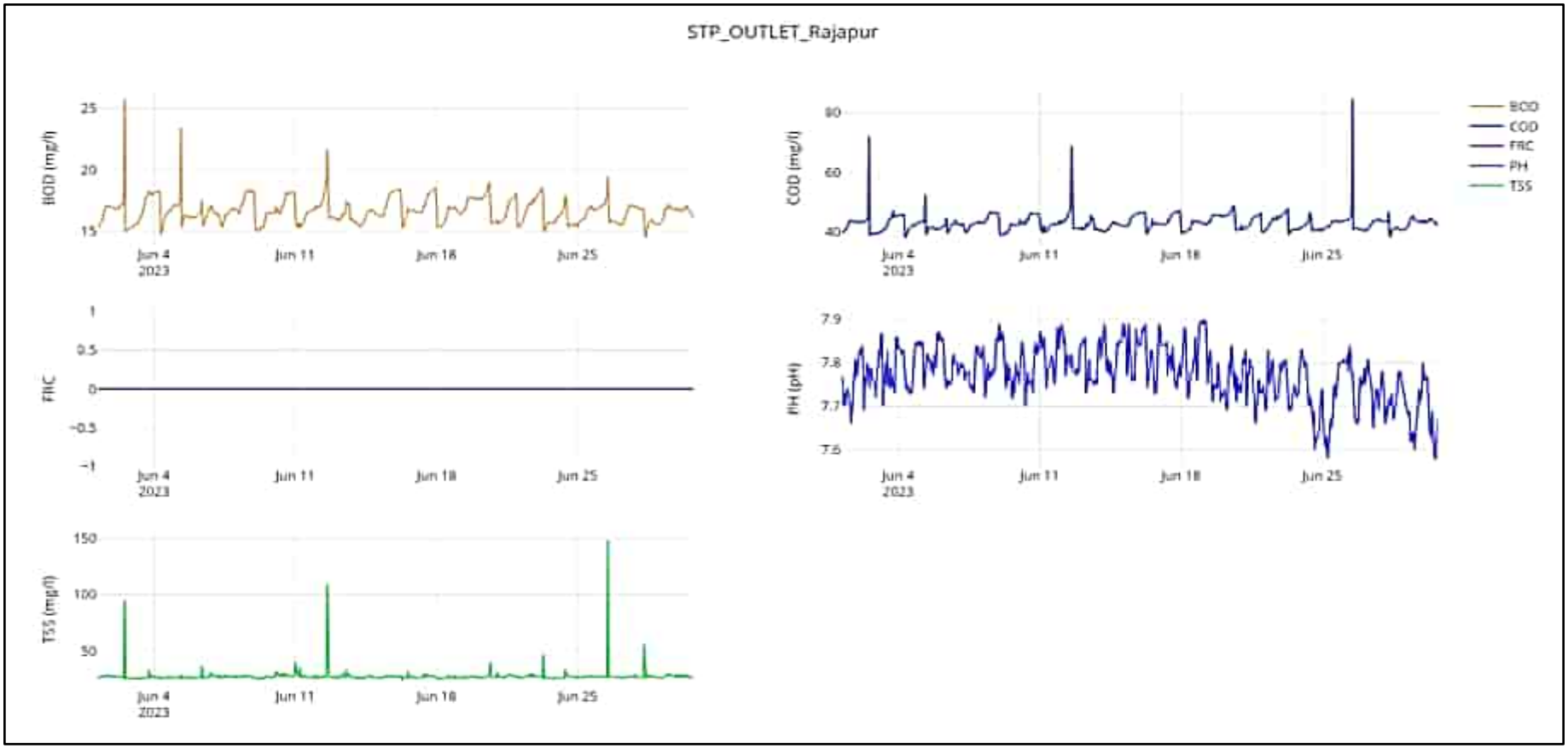
a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
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 no calibration of FRC sensor.

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-Jun-23	68410	68.41	7.35	7.74	135	16	316	40	298	27	NA	400	0.3	24.98	1400000	Plant availability is 100%
2-Jun-23	69610	69.61	7.31	7.75	130	17	336	44	293	25	NA	600	0.2	23.16	1700000	Plant availability is 100%
3-Jun-23	71200	71.2	7.34	7.78	140	18	328	44	288	27	NA	700	0.3	22.18	1400000	Plant availability is 100%
4-Jun-23	65790	65.79	7.37	7.79	125	16	324	40	295	28	NA	500	0.2	23.57	1300000	Plant availability is 100%
5-Jun-23	70410	70.41	7.29	7.8	130	17	332	44	302	26	NA	400	0.3	22.63	1400000	Plant availability is 100%
6-Jun-23	71450	71.45	7.35	7.78	135	16	324	40	289	27	NA	600	0.3	23.93	1700000	Plant availability is 100%
7-Jun-23	70100	70.1	7.24	7.76	125	17	320	44	282	28	NA	700	0.2	24.33	1400000	Plant availability is 100%
8-Jun-23	68220	68.22	7.27	7.79	140	18	340	48	308	27	NA	500	0.3	23.37	1300000	Plant availability is 100%
9-Jun-23	67920	67.92	7.37	7.77	130	16	328	40	289	25	NA	600	0.2	24.74	1400000	Plant availability is 100%
10-Jun-23	64480	64.48	7.36	7.78	135	17	332	44	297	28	NA	400	0.3	23.68	1700000	Plant availability is 100%
11-Jun-23	75430	75.43	7.15	7.71	125	16	312	40	275	27	NA	700	0.2	24.19	1300000	Plant availability is 100%
12-Jun-23	73560	73.56	7.18	7.75	135	18	308	44	291	28	NA	500	0.3	23.54	1400000	Plant availability is 100%
13-Jun-23	69890	69.89	7.28	7.79	125	16	316	40	295	27	NA	600	0.3	23.97	1700000	Plant availability is 100%
14-Jun-23	74730	74.73	7.31	7.8	130	17	324	44	283	26	NA	400	0.2	23.36	1300000	Plant availability is 100%
15-Jun-23	69750	69.75	7.33	7.81	140	18	328	44	287	27	NA	700	0.3	24.35	1400000	Plant availability is 100%
16-Jun-23	72230	72.23	7.26	7.8	135	17	312	46	292	28	NA	500	0.3	22.97	1700000	Plant availability is 100%
17-Jun-23	69530	69.53	7.15	7.78	130	18	332	48	306	27	NA	600	0.2	23.46	1300000	Plant availability is 100%
18-Jun-23	71580	71.58	7.12	7.46	125	16	308	40	275	25	NA	400	0.2	24.17	1400000	Plant availability is 100%
19-Jun-23	71150	71.15	7.23	7.79	135	17	324	44	293	28	NA	600	0.3	23.37	1700000	Plant availability is 100%
20-Jun-23	69810	69.81	7.25	7.74	140	18	316	40	285	25	NA	500	0.3	22.8	1300000	Plant availability is 100%
21-Jun-23	77720	77.72	7.17	7.77	130	16	332	44	302	28	NA	600	0.2	23.45	1400000	Plant availability is 100%
22-Jun-23	84110	84.11	7.12	7.74	135	15	324	40	285	27	NA	700	0.3	23.13	1700000	Plant availability is 100%
23-Jun-23	80820	80.82	7.16	7.73	125	17	312	44	287	26	NA	600	0.3	23.56	1300000	Plant availability is 100%
24-Jun-23	77500	77.5	7.14	7.69	130	16	316	40	283	25	NA	500	0.2	23.42	1400000	Plant availability is 100%
25-Jun-23	75840	75.84	7.12	7.7	135	17	328	44	278	27	NA	700	0.3	24.68	1300000	Plant availability is 100%
26-Jun-23	77140	77.14	7.08	7.69	130	16	312	40	273	25	NA	600	0.2	23.11	1700000	Plant availability is 100%
27-Jun-23	77610	77.61	7.03	7.73	125	17	308	40	254	25	NA	500	0.3	22.41	1200000	Plant availability is 100%
28-Jun-23	82110	82.11	7.12	7.71	120	16	312	44	285	27	NA	400	0.2	23.44	1300000	Plant availability is 100%
29-Jun-23	87130	87.13	7.06	7.67	125	17	308	40	274	25	NA	600	0.3	23.25	1700000	Plant availability is 100%
30-Jun-23	91380	91.38	7.02	7.65	130	18	320	44	295	28	NA	500	0.2	24.45	1400000	Plant availability is 100%
Average	73887.00	73.89	7.22	7.74	131.00	16.80	321.07	42.60	287.57	26.83	NA	553.33	0.26	23.59	1453333.33	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken report

Month of Site Inspection	June 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 26th May 2023, 3rd June 2023, 8th June 2023, 14th June 2023, 19th June 2023 and following observations were made after action taken by Concessionaire on May 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Rajapur STP	64.48 to 75.43
2	Rajapur SPS	6.06 to 9.80
3	Mumfodganj MPS	60.76 to 69.50

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

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	16 to 18 mg/l
2	TSS – Effluent	< 30 mg/l	26 to 28 mg/l
3	pH – Effluent	6.5 – 9.0	7.71 to 7.81
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.18 to 24.98 %
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	8.61 to 21.43
2	Rajapur Associated Infrastructure	48.26 to 60.04

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 May 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. Currently, the variation in between value of parameters recorded by online analyzers in SCADA reports and value of parameters in laboratory is more than the permissible limit given in 'Guidelines for OCEMS' by CPCB.
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. In addition to this, value of residual chlorine is not shown correctly for complete month. 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 rectify problems in SCADA reports that are submit aong with MPRs of this facility
   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 in working.
8. SCADA reports regarding flow for Rajapur STP were checked and it was found that flow records generated from SCADA are almost matching manual records for flowmeter of Mumfordganj SPS at Rajapur STP and outlet flowmeter of Rajapur STP.
9. Both Mechanical Fine screens at PTU are working but both mechanical screens are 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.
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.
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, 2 surface aerators are in maintenance. It is recommended to install DO analyzer in this tank also for better monitoring.

14. It is also suggested to clean the Aeration tank for removing dead sludge which in turn will increase the efficiency of Aeration.
15. For Quiescent zone, it is suggested to plan for cleaning of the same for removing dead sludge which in turn will increase the efficiency of Quiescent zone. Currently, lot of dead sludge deposited in quiescent zone is coming along with effluent which is deteriorating the quality of effluent.
16. Both DG sets are working. It is suggested to increase the height of chimney of DG sets as per CPCB norms.
17. All sludge transfer pumps are in working condition. Concessionaire is required to rectify the problems.
18. Sludge dewatering unit is working. Poly preparation unit is working.
19. For chlorination system, temporary arrangement is provided for using effluent water at the inlet of booster pumps. Concessionaire is suggested to make this arrangement permanent.
20. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
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. There is variation in recorded values of flow from inlet flowmeter at Rajapur STP and outlet flowmeter of Mumfordganj SPS, please rectify the problem.
24. There is variation in recorded values of flow from inlet flowmeters at Rajapur STP and outlet flowmeter of Rajapur STP, please rectify the problem.
25. In SCADA system, flow variation can be seen in between flow recorded in SCADA reports and flow recorded in logbooks for Mumfordganj SPS. This problem must be rectified.
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 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 Rajapur STP is installed but not working as per requirements of day-to-day maintenance activities. Concessionaire is required to do the modifications as discussed.
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. Also, NMCG has instructed to rectify this issue in meeting dated 26th April 2023.
    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) 5 submersible pumps are in working condition. One submersible pump is in maintenance. 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, 5 pumps are OK for operation. Remaining 1 pump is ok but there is some issue in soft starter due to which it is not possible to operate them. 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.

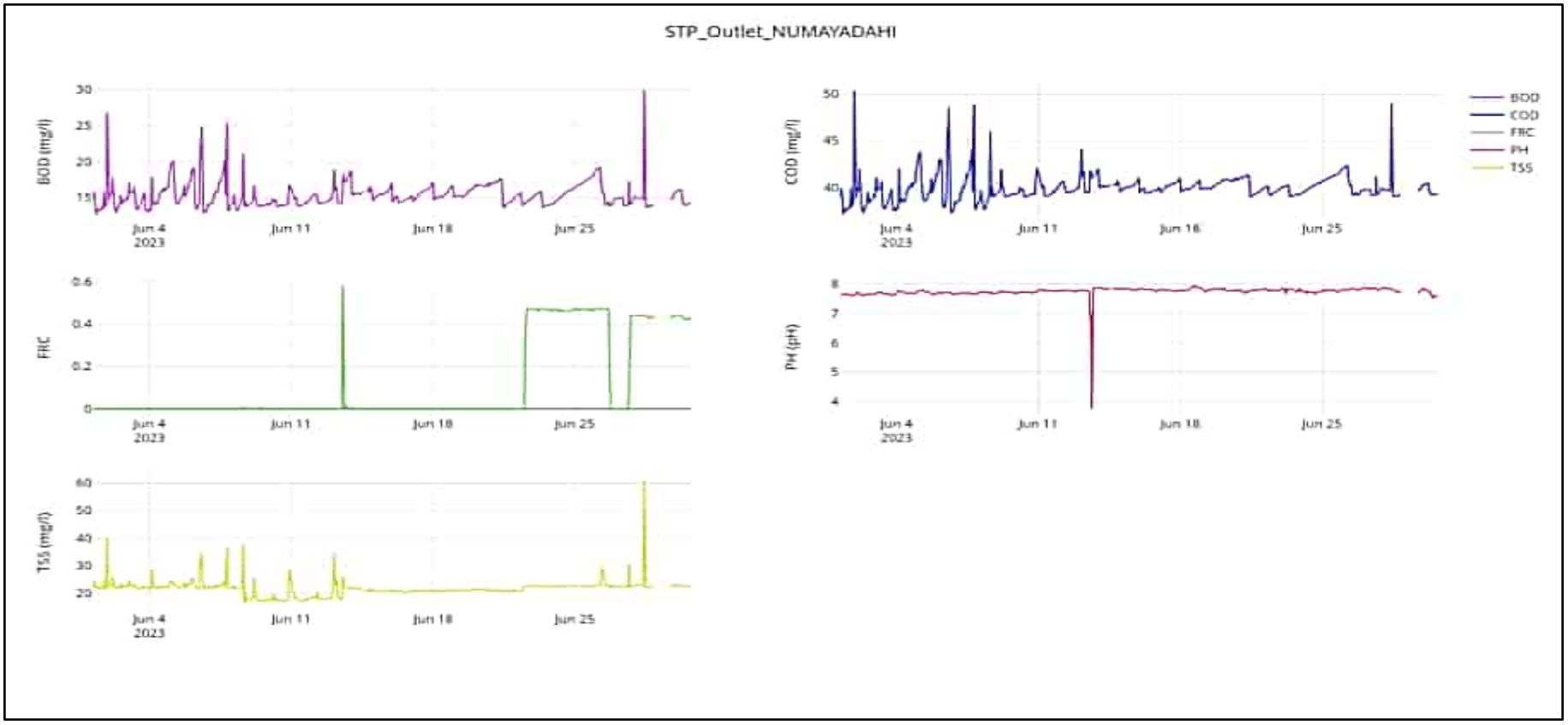
ANNEXURE-III

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 and no calibration of FRC sensor.

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-Jun-23	61520	61.52	7.38	7.76	140	15	308	36	257	23	NA	400	0.3	23.5	1700000	Plant availability is 100%
2-Jun-23	63400	63.4	7.42	7.7	130	14	324	40	268	22	NA	600	0.2	24.47	1300000	Plant availability is 100%
3-Jun-23	58410	58.41	7.23	7.64	145	16	320	40	264	24	NA	500	0.3	24.04	1100000	Plant availability is 100%
4-Jun-23	59620	59.62	7.28	7.7	150	16	308	40	271	22	NA	700	0.3	23.55	1700000	Plant availability is 100%
5-Jun-23	61420	61.42	7.36	7.74	140	18	332	44	276	25	NA	400	0.2	24.26	1300000	Plant availability is 100%
6-Jun-23	60750	60.75	7.44	7.78	145	17	328	40	274	26	NA	600	0.3	23.72	1400000	Plant availability is 100%
7-Jun-23	60960	60.96	7.32	7.68	135	16	324	44	258	23	NA	500	0.3	23.78	1700000	Plant availability is 100%
8-Jun-23	60720	60.72	7.48	7.75	145	14	312	36	252	22	NA	600	0.2	24.23	1300000	Plant availability is 100%
9-Jun-23	60960	60.96	7.28	7.65	140	15	328	40	248	19	NA	400	0.3	23.64	1100000	Plant availability is 100%
10-Jun-23	58780	58.78	7.40	7.7	130	14	320	44	224	20	NA	700	0.3	24.02	1700000	Plant availability is 100%
11-Jun-23	59990	59.88	7.36	7.72	145	16	316	36	246	20	NA	500	0.2	23.69	1400000	Plant availability is 100%
12-Jun-23	59990	59.99	7.42	7.76	150	16	308	40	256	19	NA	600	0.2	24.16	1100000	Plant availability is 100%
13-Jun-23	58270	58.27	7.38	7.73	130	18	312	44	261	23	NA	400	0.3	23.57	1300000	Plant availability is 100%
14-Jun-23	55380	55.38	7.26	7.71	145	15	300	44	268	24	NA	500	0.2	24.82	1400000	Plant availability is 100%
15-Jun-23	53350	53.35	7.32	7.75	140	16	304	40	246	22	NA	600	0.3	23.44	1300000	Plant availability is 100%
16-Jun-23	59700	59.7	7.28	7.69	130	14	328	44	254	23	NA	500	0.3	23.69	1400000	Plant availability is 100%
17-Jun-23	58330	58.33	7.38	7.68	150	17	320	40	240	22	NA	700	0.3	24.86	1700000	Plant availability is 100%
18-Jun-23	55900	55.9	7.38	7.77	135	16	332	44	248	23	NA	600	0.2	24.09	1300000	Plant availability is 100%
19-Jun-23	48980	48.98	7.26	7.74	145	16	316	44	267	23	NA	400	0.3	24.82	1100000	Plant availability is 100%
20-Jun-23	56340	56.34	7.36	7.76	150	18	312	40	244	22	NA	500	0.2	23.22	1300000	Plant availability is 100%
21-Jun-23	50250	50.25	7.26	7.68	130	15	320	44	263	23	NA	700	0.3	23.64	1400000	Plant availability is 100%
22-Jun-23	51780	51.78	7.42	7.78	145	16	308	40	268	23	NA	600	0.3	24.25	1700000	Plant availability is 100%
23-Jun-23	51650	51.65	7.33	7.74	135	14	324	44	257	24	NA	500	0.2	22.85	1400000	Plant availability is 100%
24-Jun-23	52860	52.86	7.26	7.75	140	17	316	44	263	24	NA	700	0.3	24.79	1300000	Plant availability is 100%
25-Jun-23	62180	62.18	7.34	7.77	130	16	328	40	248	22	NA	600	0.2	23.78	1100000	Plant availability is 100%
26-Jun-23	64020	64.02	7.42	7.78	150	17	332	44	259	25	NA	400	0.2	24.37	1400000	Plant availability is 100%
27-Jun-23	62750	62.75	7.46	7.7	135	15	312	36	271	23	NA	700	0.3	23.75	1100000	Plant availability is 100%
28-Jun-23	55150	55.15	7.36	7.78	140	17	320	44	276	26	NA	500	0.2	24.2	1400000	Plant availability is 100%
29-Jun-23	18720	18.72	7.28	7.67	130	14	304	36	247	22	NA	600	0.3	23.57	1300000	Plant availability is 100%
30-Jun-23	57530	57.53	7.44	7.76	145	16	324	40	266	25	NA	400	0.3	24.98	1700000	Plant availability is 100%
Average	56655.67	56.65	7.35	7.73	140.00	15.80	318.00	41.07	258.00	22.80	NA	546.67	0.26	23.99	1380000.00	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken report

Month of Site Inspection	June 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 30th May 2023, 6th June 2023, 13thJune 2023, 21st June and following observations were made after action taken by Concessionaire on May 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Numayadahi STP	53.35 to 63.40
2	Ghagharnalla MPS	55.15 to 64.88
3	Sasur Kadheri SPS	31.15 to 38.14
4	Lukerganj SPS	4.63 to 5.52

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

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	14 to 18 mg/l
2	TSS – Effluent	< 30 mg/l	19 to 26 mg/l
3	pH – Effluent	6.5 – 9.0	7.64 to 7.78
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.44 to 24.86 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 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	48.93 to 72.01
2	Numayadahi Associated Infrastructure	89.00 to 100.15

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

- **<u>Status of various units & records at site after action taken by Concessionaire on May 23 month recommendation given by Project Engineer.</u>**

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.
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. In addition to this, value of residual chlorine is not shown correctly for complete month. 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 as there is variation between inlet and outlet flow which is more than water loss shown for the STP. 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 was 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. Excess air is coming out from 5-6 points in all aeration tanks due to problem in diffusers. Because of air distribution in not uniform in aeration tanks hence this problem

must be rectified at the earliest.

12. All aeration blowers are in working condition & two blowers were found running.
13. DO analyzer at the outlet of all aeration tanks are 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. Replacement of chute provided for sludge collection is required.
16. Drain must be provided near the sludge collection area of dewatering system for avoiding sludge accumulation.
17. All Sludge Recirculation Pumps are in working condition.
18. Both Secondary clarifiers were found in operation.
19. Both booster pumps & both chlorinators are in working condition. Residual chlorine was checked & found to be around 0.2 – 0.3 mg/l.
20. Leak detection and leak absorption system are working. It must be ensured that the system must remain in auto mode all the time.
21. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
22. Both DGs are working.
23. Minor Seepages from Biotowers & some other units can be seen, and this must be rectified.
24. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. CMMS system is installed but it is required to do modifications as discussed for making it useful regarding daily maintenance works performed at site. Concessionaire to please do the needful as discussed.
25. Painting of units in the STP is completed from outside. It is suggested to complete the painting work for all units from inside also.
26. All CCTV cameras are working.
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. 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 leakages in 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 of units in the MPS is completed from outside. It is suggested to complete the painting work for all units from inside also.

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

a) Currently, it was found that raw sewage keeps overflowing from the retaining wall even when the pumping from this SPS is around 30-35 MLD which is more than 200% of the total capacity of SPS. Due to the amount of overloading on the SPS, still 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) Currently all submersible pumps in the SPS are OK for operations.
c) Both Mechanical screens are working.
d) Both DG sets are OK for operation.
e) Painting of units in the SPS is completed from outside. It is suggested to complete the painting work for all units from inside also.

30. At Lukerganj SPS,

a) All 6 pumps are OK for operation. It is suggested to complete repairing of old pumps also so that they can be used during emergency situation.
b) One mechanical screen is working, and one is in maintenance.
c) Both DG sets are working.
d) Painting of units in the SPS is completed from outside. It is suggested to start the painting work for all units from inside also.

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

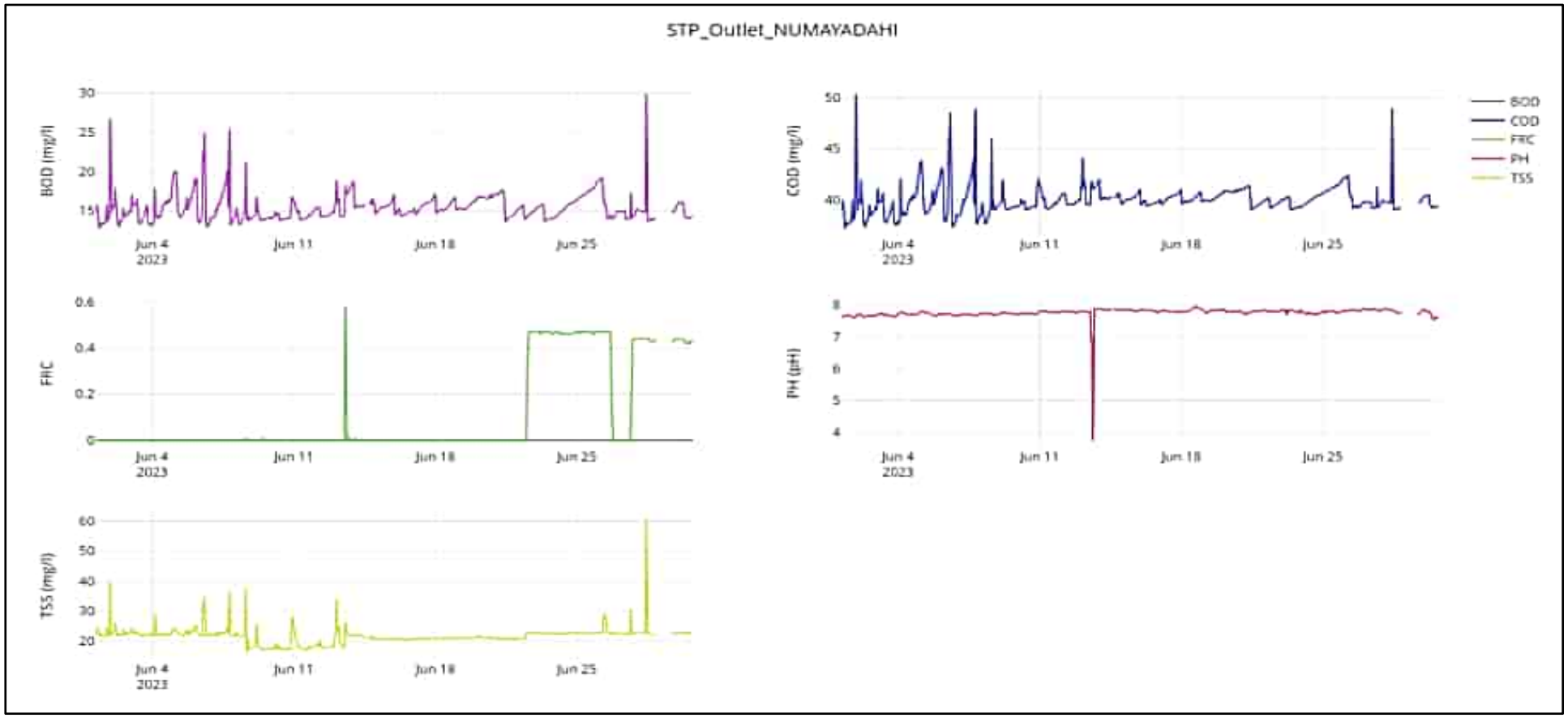
a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
b) Calibration 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 and no calibration of FRC sensor.

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-Jun-23	35270	35.27	7.34	7.42	165	27	364	44	328	37	NA	600	0.3	24.4	1400000	Plant availability is 100%
2-Jun-23	37810	37.81	7.28	7.39	160	25	360	44	336	39	NA	700	0.2	23.6	1300000	Plant availability is 100%
3-Jun-23	35020	35.02	7.31	7.4	155	22	356	40	340	33	NA	400	0.3	24.7	1400000	Plant availability is 100%
4-Jun-23	37260	37.26	7.29	7.35	160	23	352	40	297	36	NA	500	0.3	25.3	1700000	Plant availability is 100%
5-Jun-23	35100	35.1	7.33	7.42	150	25	360	48	314	42	NA	800	0.2	24.5	1200000	Plant availability is 100%
6-Jun-23	36710	36.71	7.34	7.44	155	23	364	40	323	37	NA	600	0.3	23.7	1400000	Plant availability is 100%
7-Jun-23	35500	35.5	7.3	7.5	150	21	356	32	296	28	NA	700	0.2	23.1	1100000	Plant availability is 100%
8-Jun-23	36350	36.35	7.35	7.41	155	23	360	36	330	29	NA	400	0.3	24.5	1300000	Plant availability is 100%
9-Jun-23	35820	35.82	7.32	7.47	160	25	352	36	314	28	NA	600	0.2	25.2	1700000	Plant availability is 100%
10-Jun-23	35510	35.51	7.43	7.52	165	26	360	40	322	30	NA	700	0.3	24.3	1400000	Plant availability is 100%
11-Jun-23	38240	38.24	7.45	7.49	150	25	348	40	308	29	NA	800	0.3	23.8	1700000	Plant availability is 100%
12-Jun-23	40350	40.35	7.39	7.5	165	25	356	40	298	31	NA	400	0.2	25.3	1100000	Plant availability is 100%
13-Jun-23	38700	38.7	7.4	7.48	155	19	360	36	309	33	NA	500	0.3	24.2	1300000	Plant availability is 100%
14-Jun-23	39140	39.14	7.37	7.44	160	24	364	40	320	31	NA	700	0.3	25.4	1400000	Plant availability is 100%
15-Jun-23	37140	37.14	7.42	7.46	165	25	360	40	310	30	NA	400	0.2	24.6	1200000	Plant availability is 100%
16-Jun-23	40480	40.48	7.37	7.43	170	27	364	36	317	31	NA	600	0.3	24.2	1100000	Plant availability is 100%
17-Jun-23	41360	41.36	7.45	7.52	165	24	360	40	328	33	NA	800	0.2	23.5	1700000	Plant availability is 100%
18-Jun-23	39440	39.44	7.42	7.51	160	27	368	44	332	32	NA	500	0.3	25.3	1400000	Plant availability is 100%
19-Jun-23	46040	46.04	7.46	7.5	165	25	372	44	326	37	NA	700	0.3	24.5	1700000	Plant availability is 100%
20-Jun-23	40100	40.1	7.37	7.45	155	24	364	48	322	39	NA	600	0.2	24.7	1400000	Plant availability is 100%
21-Jun-23	39040	39.04	7.43	7.49	160	22	368	40	335	38	NA	500	0.2	23.9	1300000	Plant availability is 100%
22-Jun-23	43700	43.7	7.44	7.53	155	24	364	40	332	34	NA	700	0.3	25.3	1200000	Plant availability is 100%
23-Jun-23	43950	43.95	7.42	7.48	165	27	360	44	340	31	NA	400	0.3	25.6	1100000	Plant availability is 100%
24-Jun-23	39820	39.82	7.51	7.55	160	28	364	44	335	32	NA	700	0.2	24.2	1700000	Plant availability is 100%
25-Jun-23	41840	41.84	7.08	7.39	165	27	368	40	345	35	NA	800	0.3	23.7	1300000	Plant availability is 100%
26-Jun-23	43250	43.25	7.47	7.56	160	21	364	36	328	31	NA	500	0.3	24.5	1400000	Plant availability is 100%
27-Jun-23	38690	38.69	7.32	7.48	155	21	352	36	321	32	NA	700	0.3	25.4	1200000	Plant availability is 100%
28-Jun-23	36120	36.12	7.43	7.52	150	22	348	40	340	35	NA	600	0.2	24.5	1300000	Plant availability is 100%
29-Jun-23	37900	37.9	7.48	7.54	155	21	356	40	343	34	NA	400	0.3	25.3	1400000	Plant availability is 100%
30-Jun-23	38510	38.51	7.37	7.56	160	23	360	36	332	31	NA	500	0.3	24.7	1700000	Plant availability is 100%
Average	38805.33	38.81	7.38	7.47	159.33	24.10	360.13	40.13	324.03	33.27	NA	593.33	0.26	24.54	1383333.33	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken report

Month of Site Inspection	June 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 29thMay 2023, 5thJune 2023, 8th June 2023, 15th June 2023, 20th June 2023 and following observations were made after action taken by Concessionaire on May 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Salori STP	35.02 to 40.48
2	Salori MPS	35.02 to 40.48

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	21 to 27 mg/l
2	TSS – Effluent	< 50 mg/l	28 to 42 mg/l
3	pH – Effluent	6.5 – 9.0	7.35 to 7.52
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 800 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.10 to 25.40 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 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	89.20 to 103.96
2	Salori Associated Infrastructure	48.16 to 53.60

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 May 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
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. In addition to this, value of residual chlorine is not shown correctly for complete month. 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 both mechanical screens are 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 three 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. Concessionaire is required to ensure that sludge withdrawal from both clarisettlers must be done properly.
14. Quality of effluent is satisfactory.
15. Sludge dewatering building is in operation, poly preparation unit is in operation.
16. Both Sludge transfer pumps for Clarisettler are working.
17. Both Filtrate pumps are working.
18. Both chlorinators are working. One out of two booster pumps were under maintenance.
19. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
20. Leak detection and leak absorption system are working. It must be ensured that the system must remain in auto mode all the time.
21. Thickener unit is working.
22. Both DGs are working.

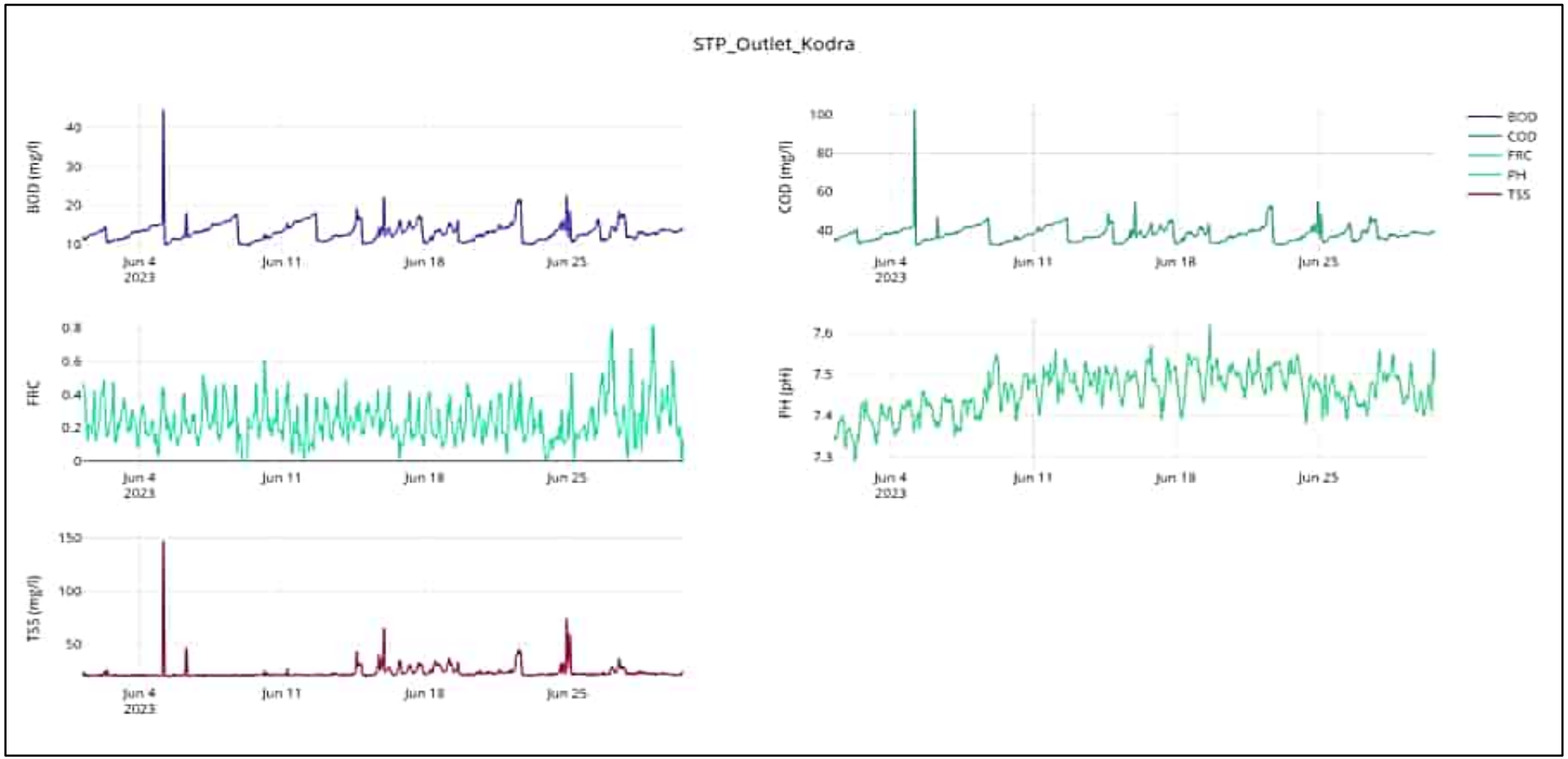
23. One transformer is under maintenance. No standby option present at site. Concessionaire to please look into the matter & rectify the problem at the earliest.
24. It was found that sludge is being dumped within the STP. Concessionaire to please look into the matter and dump sludge only in the land which is being allotted by UPJN for sludge disposal.
25. At Salori MPS, all pumps are working. Since the programming for running pumps in auto mode is completed, it is suggested to operate them in auto mode for optimum performance.
26. 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.
27. 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.
28. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.
29. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. CMMS system is installed but it is required to do modifications as discussed for making it useful regarding daily maintenance works performed at site. Concessionaire to please do the needful.
30. Installation & commissioning of Public Address System is not completed yet.
31. Housekeeping near FeCl3 dosing system needs to be improved.
32. Housekeeping in dewatering area must be improved, lot of sludge can be seen scattered in this area.
33. All CCTV cameras are working.
34. 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 and no calibration of FRC sensor.

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

adani

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- <8)	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 - <50 mg/l)	Inlet (Design - NIL)	Final (Design - <1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Consistency (<20%)	Fecal Coliform (20,00,000 MPN/gTS)	
1-Jun-23	25000	25.00	7.15	7.48	135	13	313	36	259	21	NA	700	0.2	23.43	1400000	Plant availability is 100%
2-Jun-23	24100	24.10	7.18	7.53	140	13	320	40	265	23	NA	500	0.3	23.19	1200000	Plant availability is 100%
3-Jun-23	23.600	23.60	7.24	7.46	145	12	304	36	275	22	NA	400	0.3	23.49	1300000	Plant availability is 100%
4-Jun-23	28000	28.00	7.22	7.41	140	11	298	48	252	20	NA	600	0.2	24.11	1700000	Plant availability is 100%
5-Jun-23	28655	28.66	7.17	7.54	150	12	304	36	283	22	NA	500	0.3	23.29	1300000	Plant availability is 100%
6-Jun-23	29100	29.10	7.2	7.49	145	13	297	40	270	20	NA	600	0.2	23.36	1200000	Plant availability is 100%
7-Jun-23	27170	27.17	7.26	7.45	150	15	308	44	279	21	NA	400	0.2	24.35	1800000	Plant availability is 100%
8-Jun-23	30540	30.54	7.24	7.47	130	14	296	40	273	23	NA	700	0.2	23.57	1700000	Plant availability is 100%
9-Jun-23	27700	27.70	7.19	7.5	130	11	284	32	257	21	NA	400	0.3	24.21	1300000	Plant availability is 100%
10-Jun-23	29920	29.92	7.22	7.48	140	13	292	36	270	22	NA	500	0.2	23.27	1400000	Plant availability is 100%
11-Jun-23	30000	30.5	7.28	7.52	145	14	308	40	284	20	NA	700	0.2	23.09	1300000	Plant availability is 100%
12-Jun-23	28470	28.47	7.26	7.54	150	15	296	44	268	21	NA	600	0.3	23.35	1400000	Plant availability is 100%
13-Jun-23	26.990	26.99	7.21	7.49	140	12	288	36	275	23	NA	500	0.3	23.44	1300000	Plant availability is 100%
14-Jun-23	26700	26.70	7.25	7.51	135	14	300	40	283	25	NA	400	0.2	24.25	1300000	Plant availability is 100%
15-Jun-23	27000	27.02	7.24	7.48	145	12	316	36	298	27	NA	500	0.3	24.05	1400000	Plant availability is 100%
16-Jun-23	26000	26.98	7.18	7.53	140	14	304	40	283	25	NA	400	0.3	23.73	1300000	Plant availability is 100%
17-Jun-23	26950	26.95	7.23	7.5	145	15	320	44	287	28	NA	700	0.2	24.4	1300000	Plant availability is 100%
18-Jun-23	29115	29.11	7.25	7.48	130	12	296	36	289	29	NA	600	0.3	24	1300000	Plant availability is 100%
19-Jun-23	28450	28.45	7.28	7.57	155	15	304	40	252	24	NA	400	0.3	22.83	1300000	Plant availability is 100%
20-Jun-23	26510	26.51	7.21	7.53	135	12	288	36	275	25	NA	700	0.2	24.73	1400000	Plant availability is 100%
21-Jun-23	28710	28.71	7.27	7.48	150	14	312	40	284	24	NA	500	0.3	24.54	1300000	Plant availability is 100%
22-Jun-23	28.890	28.89	7.29	7.51	145	16	324	44	296	29	NA	600	0.2	23.57	1300000	Plant availability is 100%
23-Jun-23	29110	29.91	7.21	7.47	140	11	308	32	278	23	NA	500	0.2	23.29	1700000	Plant availability is 100%
24-Jun-23	30010	30.01	7.25	7.49	150	14	310	40	273	25	NA	700	0.3	23.44	1300000	Plant availability is 100%
25-Jun-23	29.940	29.94	7.19	7.45	135	12	296	36	267	23	NA	400	0.2	24.39	1400000	Plant availability is 100%
26-Jun-23	29140	29.14	7.26	7.43	145	13	304	40	278	21	NA	700	0.3	23.75	1300000	Plant availability is 100%
27-Jun-23	33.590	33.59	7.22	7.52	130	15	324	44	307	29	NA	600	0.3	23.94	1700000	Plant availability is 100%
28-Jun-23	33.000	33.5	7.24	7.49	140	13	308	36	286	23	NA	400	0.2	23.68	1300000	Plant availability is 100%
29-Jun-23	32.510	32.51	7.26	7.44	145	12	316	40	292	22	NA	500	0.3	24.94	1700000	Plant availability is 100%
30-Jun-23	39250	39.25	7.27	7.46	140	13	312	36	277	23	NA	500	0.3	24.57	1400000	Plant availability is 100%
Average	28761.66	28.76	7.24	7.49	140.50	13.23	304.97	38.67	276.83	23.27	NA	541.33	0.26	23.79	1376666.67	

Source: Logbook of Laboratory at Sewage Treatment Plant

3.2 Action taken report

Month of Site Inspection	June 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 26th May 2023, 1thJune 2023, 8th June 2023, 15th June 2023, 20th June 2023 and following observations were made after action taken by Concessionaire on May 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Kodra STP	25.86 to 30.56
2	Kodra MPS	25.86 to 30.56

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	11 to 16 mg/l
2	TSS – Effluent	< 30 mg/l	20 to 28 mg/l
3	pH – Effluent	6.5 – 9.0	7.41 to 7.54
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.41 to 24.49%
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	64.97 to 100.96
2	Kodra Associated Infrastructure	96.47 to 102.74

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 May 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.
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, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. In addition to this, value of residual chlorine is not shown correctly for complete month. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Flowmeter at inlet of STP is working.
5. Flowmeter at outlet of STP is working.
6. Both grit removal units are working.
7. Both Mechanical Fine Screens at PTU are working. Though the screens are running in auto mode through timer, differential level sensors must also be made operational for running mechanical screens more efficiently through level difference during peak and lean period.
8. All Biotowers are working. Small amount of plastic waste is reaching the biotowers which must be rectified by doing overhauling of mechanical screens at PTU.
9. All Aeration tanks are working. Excess air is coming out from 5-6 points in all aeration tanks due to problem in diffusers. Because of air distribution in not uniform in aeration tanks hence this problem must be rectified at the earliest.
10. Both DO Analyzers 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. CMMS system is installed but it is required to do modifications as discussed for making it useful regarding daily maintenance works performed at site. 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 complete 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:

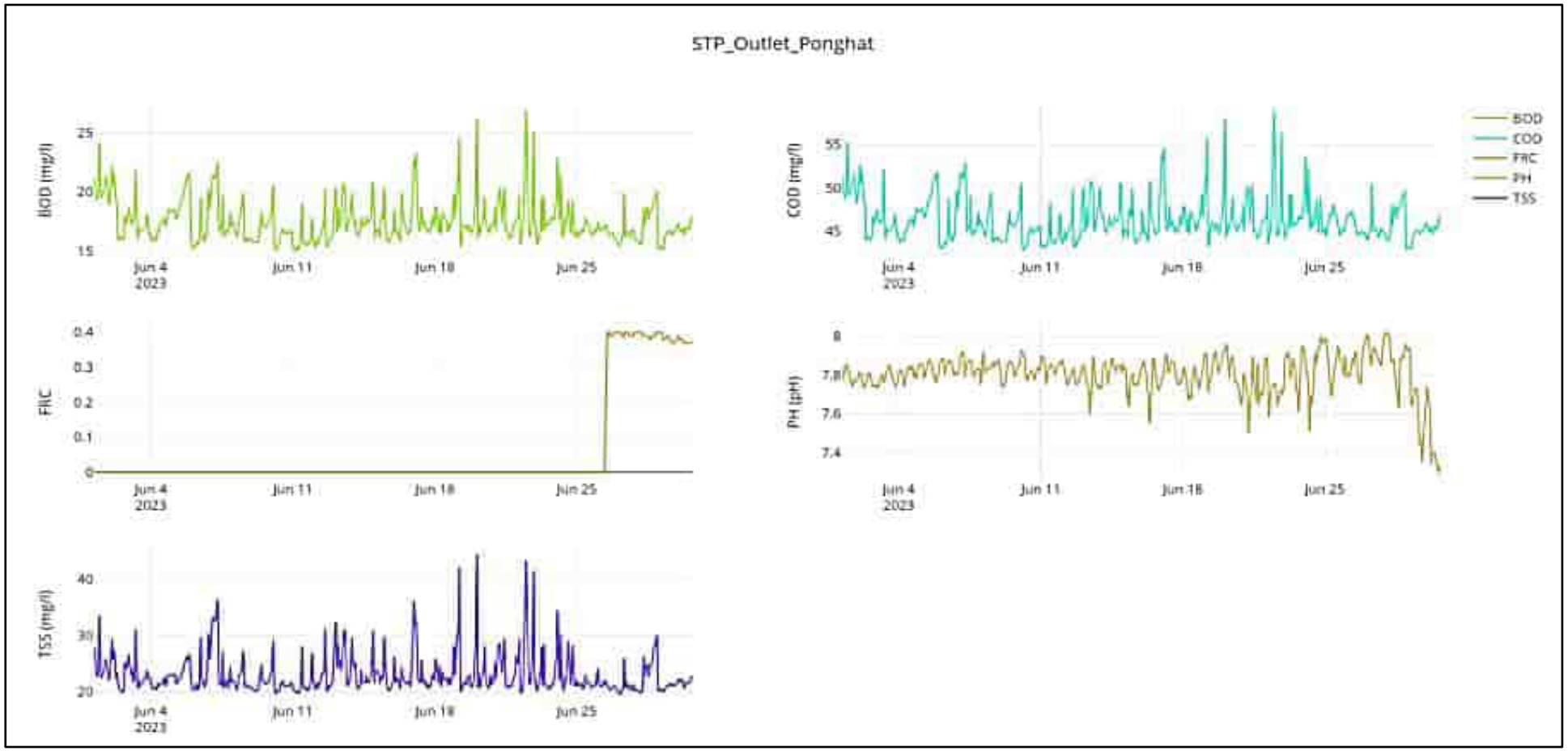
    a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.
    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 and no calibration of FRC sensor.

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-Jun-23	12790	12.79	7.4	7.72	145	19	300	48	263	27	NA	500	0.2	23.11	1200000	Plant availability is 100%
2-Jun-23	12870	12.87	7.48	7.65	150	17	308	44	285	25	NA	400	0.3	23.4	1300000	Plant availability is 100%
3-Jun-23	13810	13.81	7.39	7.68	130	18	304	48	275	25	NA	300	0.3	22.88	1200000	Plant availability is 100%
4-Jun-23	13070	13.07	7.29	7.69	140	17	312	44	292	24	NA	400	0.2	22.41	1300000	Plant availability is 100%
5-Jun-23	13510	13.51	7.38	7.7	135	18	302	48	282	26	NA	300	0.3	23.43	1400000	Plant availability is 100%
6-Jun-23	12590	12.59	7.4	7.66	145	17	306	44	298	24	NA	500	0.3	21.85	1200000	Plant availability is 100%
7-Jun-23	11590	11.59	7.42	7.69	130	18	300	48	284	25	NA	400	0.3	22.49	1500000	Plant availability is 100%
8-Jun-23	12450	12.45	7.41	7.72	140	16	302	44	270	24	NA	600	0.2	23.51	1200000	Plant availability is 100%
9-Jun-23	13660	13.66	7.4	7.74	135	17	308	48	285	23	NA	300	0.3	23.7	1400000	Plant availability is 100%
10-Jun-23	15380	15.38	7.46	7.76	150	18	312	44	289	22	NA	400	0.3	23.5	1200000	Plant availability is 100%
11-Jun-23	13290	13.29	7.43	7.73	145	16	306	48	274	23	NA	500	0.3	23.67	1300000	Plant availability is 100%
12-Jun-23	14300	12.62	7.45	7.68	140	15	310	44	286	24	NA	400	0.2	23.38	1400000	Plant availability is 100%
13-Jun-23	14300	14.3	7.44	7.7	130	17	300	48	279	27	NA	300	0.3	23.68	1200000	Plant availability is 100%
14-Jun-23	13260	13.26	7.4	7.74	145	16	308	44	283	25	NA	600	0.3	23.72	1500000	Plant availability is 100%
15-Jun-23	12460	12.46	7.44	7.75	135	18	318	48	294	24	NA	400	0.2	23.5	1300000	Plant availability is 100%
16-Jun-23	13400	13.46	7.41	7.7	150	17	312	44	289	25	NA	300	0.3	23.23	1200000	Plant availability is 100%
17-Jun-23	13150	13.15	7.43	7.72	140	18	300	48	294	26	NA	400	0.3	23.77	1300000	Plant availability is 100%
18-Jun-23	13370	13.37	7.46	7.75	130	16	296	44	270	24	NA	500	0.3	23.55	1400000	Plant availability is 100%
19-Jun-23	13540	13.54	7.43	7.78	145	17	308	48	294	25	NA	300	0.3	23.06	1200000	Plant availability is 100%
20-Jun-23	14510	14.51	7.41	7.75	135	18	300	44	283	26	NA	200	0.2	23.67	1300000	Plant availability is 100%
21-Jun-23	13620	13.62	7.4	7.64	140	17	306	48	295	25	NA	400	0.3	23.72	1200000	Plant availability is 100%
22-Jun-23	13450	13.45	7.46	7.69	150	18	312	44	290	26	NA	300	0.3	21.85	1400000	Plant availability is 100%
23-Jun-23	13760	13.76	7.43	7.71	145	16	316	48	286	24	NA	500	0.3	23.5	1200000	Plant availability is 100%
24-Jun-23	11390	11.39	7.4	7.75	140	17	320	44	298	27	NA	300	0.3	22.41	1300000	Plant availability is 100%
25-Jun-23	13690	13.69	7.46	7.79	145	18	308	48	288	23	NA	200	0.2	23.43	1400000	Plant availability is 100%
26-Jun-23	14000	14	7.42	7.74	130	16	304	44	294	22	NA	400	0.3	23.51	1200000	Plant availability is 100%
27-Jun-23	13650	13.65	7.4	7.78	150	15	310	48	290	21	NA	500	0.3	23.72	1300000	Plant availability is 100%
28-Jun-23	12880	12.88	7.41	7.73	140	18	300	44	282	26	NA	600	0.3	23.36	1400000	Plant availability is 100%
29-Jun-23	14870	14.87	7.44	7.55	145	17	308	48	276	23	NA	400	0.2	22.96	1300000	Plant availability is 100%
30-Jun-23	14320	14.32	7.38	7.38	135	16	312	44	289	24	NA	600	0.3	23.45	1200000	Plant availability is 100%
Average	13431.00	13.38	7.42	7.70	140.50	17.03	306.93	45.90	285.33	24.53	NA	405.67	0.27	23.25	1296666.67	Plant availability is 100%

Source: Logbook of Laboratory at Sewage Treatment Plant

4.2 Inspection Report

Month of Site Inspection	June 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 26th May 2023, 1st June 2023, 8th June 2023, 15th June 2023, 22nd June 2023 and following observations were made after action taken by Concessionaire on May 23 month recommendation given by Project Engineer.

- **Status of Availability:**

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Ponghat STP	11.59 to 15.38
2	Ponghat MPS	11.59 to 15.38

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

- **Status of KPIs:**

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	15 to 19
2	TSS – Effluent	< 30 mg/l	22 to 28
3	pH – Effluent	6.5 – 9.0	7.65 to 7.76
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	300 to 600
5	Consistency – Sludge	> 20 %	21.85 to 23.77
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1200000 to 1500000

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	104.45 to 150.56
2	Ponght Associated Infrastructure	79.09 to 86.16

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

- **<u>Status of various units & records at site after action taken by Concessionaire on May 23 month recommendation given by Project Engineer.</u>**

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.
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, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. In addition to this, value of residual chlorine is not shown correctly for complete month. 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 Blowers are working.
12. One Centrifuges is working, and one centrifuge is in maintenance.
13. All Sludge Feed pumps, and Poly dosing pumps are working.
14. Quality of effluent is satisfactory.
15. Drainage system must be provided near the sludge collection area of dewatering system for avoiding sludge accumulation.
16. Both Sludge Recirculation Pumps are working.
17. Both Chlorine Dosing Systems are working. Residual chlorine in effluent was found to be 0.2 to 0.3 mg/l.
18. Installation of new chlorine analyzer at outlet is completed but it is not showing correct values.
19. 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.
20. At Ponghat MPS, all 6 pumps are OK for operation. Presser transmitter is not installed at pump discharge common header.
21. 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.
22. 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.

23. 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.
24. As per Clause no. 1.6 & 1.7.1 of Concession Agreement, Computer Maintenance Management System (CMMS) must be implemented at all Sites. CMMS system is installed but it is required to do modifications as discussed for making it useful regarding daily maintenance works performed at site. Concessionaire to please do the needful.
25. Installation of Public Address System is done but its commissioning is not completed yet.
26. Painting of units in the STP is completed from outside. It is suggested to complete the painting work for all units from inside also.
27. 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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	Yes	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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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.	NA	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 June 2023 to 30th June 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.	NA	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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30th June 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 June 2023 to 30 June 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	Sand gradation	IS 2386-Part 1	ONE TEST/300CUM	1	1	0	Sand Gradation Test conduct in, Jhunsi and found satisfactory
3	Cube test	IS 516-2001	Quantity of concrete (m3)Number of samples 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4 plus one additional sample for each additional 50 m3 or part thereof.	03	03	0	Jhunsi SPS cube test at jhunsi site . Cube test is acceptable for 7 Days
4	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

S.NO	Description	Instrument	1st June 2023 to 30 June 2023				Remarks
			As per IS no of test required	No of test conducted	No of test accepted	No of test rejected	
5	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
6	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
7	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
8	OPC CEMENT 43 GRADE	IS 4031	I TEST PER LOT	1	1	0	Ultratech (Third party batch report Submitted)