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
December 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;

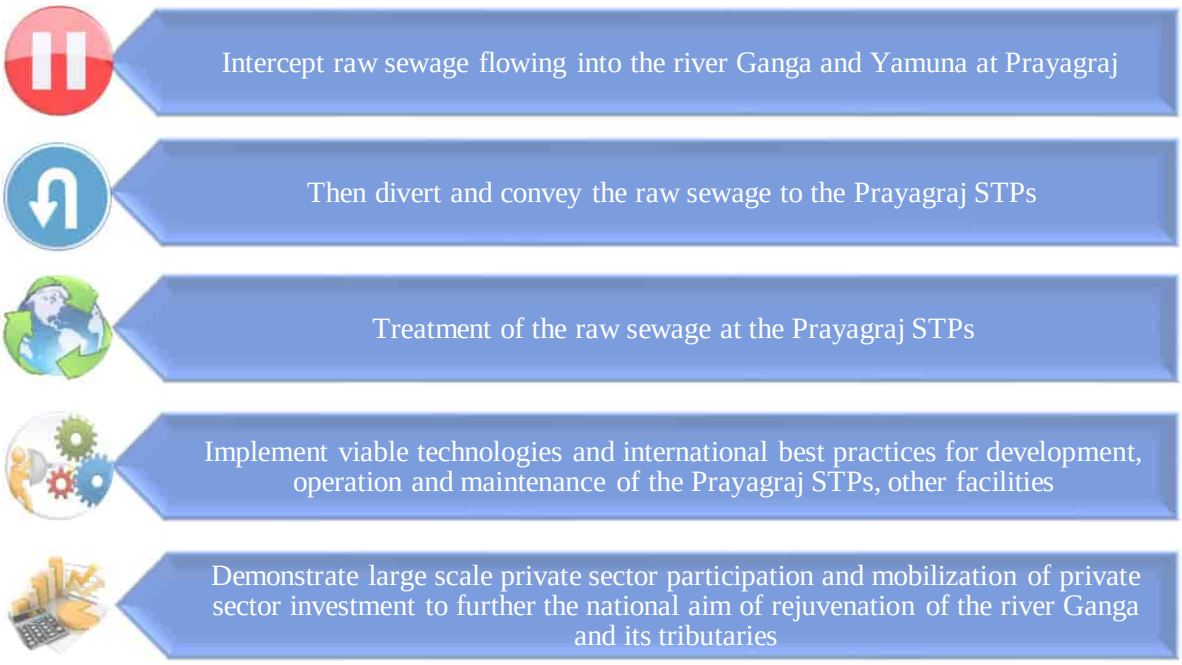

Figure 1 : Objectives of NMCG and UP JAL NIGAM

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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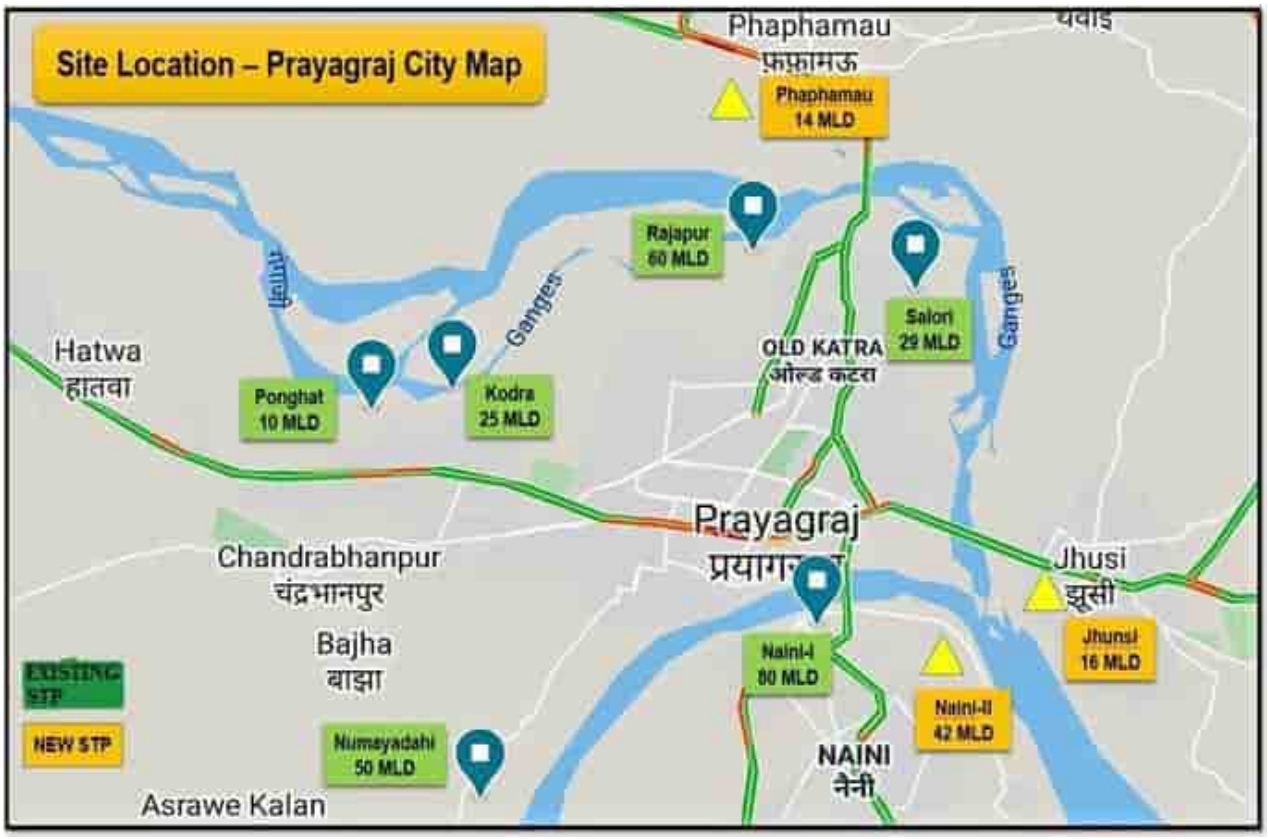
4. Project at Glance

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

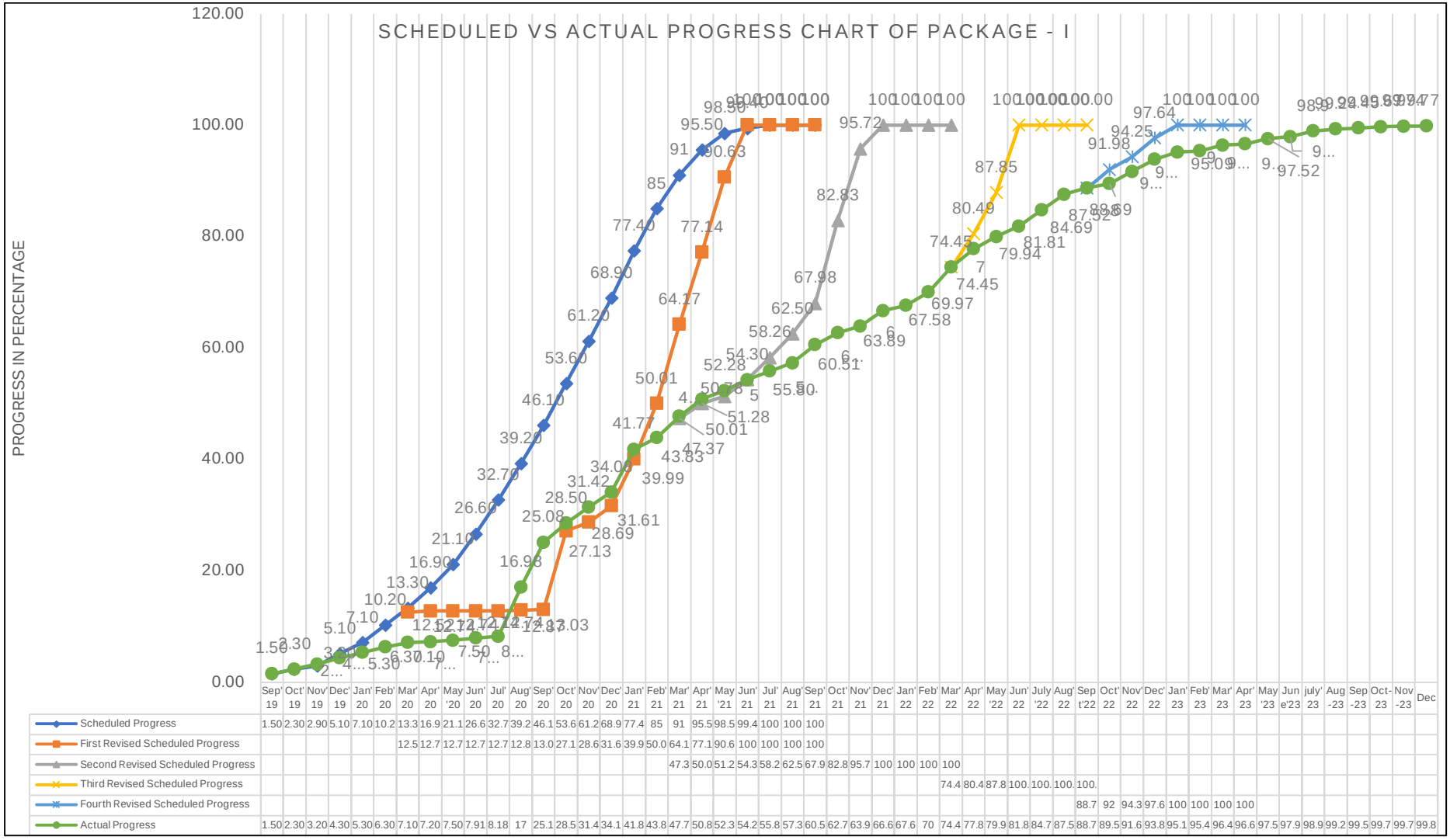
Package Number - I				
Nature of work	Facilities			
New construction	Design, develop, finance, construct, operate and maintain, and transfer the Package-I Facilities including three STP facilities with a proposed capacity of 42 MLD at Naini (District G), 14 MLD at Phaphamau (District F), and 16 MLD at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

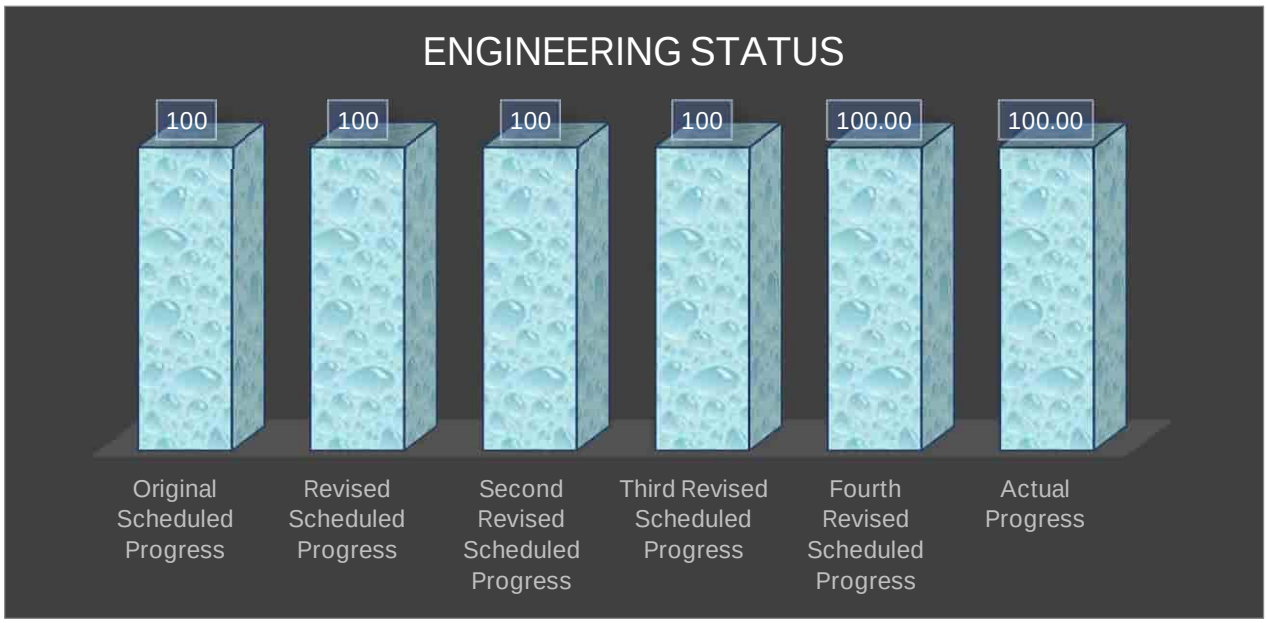
7. Status of project

7.1 Package-I Overall progress status



	Sep' 19	Oct' 19	Nov' 19	Dec' 19	Jan' 20	Feb' 20	Mar' 20	Apr' 20	May '20	Jun' 20	Jul' 20	Aug' 20	Sep' 20	Oct' 20	Nov' 20	Dec' 20	Jan' 21	Feb' 21	Mar' 21	Apr' 21	May '21	Jun' 21	Jul' 21	Aug' 21	Sep' 21	Oct' 21	Nov' 21	Dec' 21	Jan' 22	Feb' 22	Mar' 22	Apr' 22	May '22	Jun' 22	July '22	Aug' 22	Sep t'22	Oct' 22	Nov' 22	Dec' 22	Jan' 23	Feb' 23	Mar' 23	Apr' 23	May '23	Jun e'23	july' 23	Aug' -23	Sep' -23	Oct' -23	Nov' -23	Dec
Scheduled Progress	1.50	2.30	2.90	5.10	7.10	10.2	13.3	16.9	21.1	26.6	32.7	39.2	46.1	53.6	61.2	68.9	77.4	85	91	95.5	98.5	99.4	100	100	100																									
First Revised Scheduled Progress							12.5	12.7	12.7	12.7	12.7	12.8	13.0	27.1	28.6	31.6	39.9	50.0	64.1	77.1	90.6	100	100	100	100																												
Second Revised Scheduled Progress																			47.3	50.0	51.2	54.3	58.2	62.5	67.9	82.8	95.7	100	100	100	100																						
Third Revised Scheduled Progress																															74.4	80.4	87.8	100.	100.	100	100.														
Fourth Revised Scheduled Progress																																				88.7	92	94.3	97.6	100	100	100	100							
Actual Progress	1.50	2.30	3.20	4.30	5.30	6.30	7.10	7.20	7.50	7.91	8.18	17	25.1	28.5	31.4	34.1	41.8	43.8	47.7	50.8	52.3	54.2	55.8	57.3	60.5	62.7	63.9	66.6	67.6	70	74.4	77.8	79.9	81.8	84.7	87.5	88.7	89.5	91.6	93.8	95.1	95.4	96.4	96.6	97.5	97.9	98.9	99.2	99.5	99.7	99.7	99.8

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	Schedule d End Date	Schedul ed Comple tion (In %)	Completi on up to previous month (In %) (A)	This month Completi on (In%) (B)	Total Comple tion (In %) (A+B)
8.	Resubmission, review and Approval of Basic Engg. of drawings/documen ts 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/docume nts to UPJN (Based on old location)	11-01-19	11-02-19	100%	100%	0%	100%
11.	Submission of Basic Engg. Drawings/docume nts 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/documen ts 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/docume nts to UPJN (Based on old location)	11-01-19	11-02-19	100%	100%	0%	100%
15.	Submission of Basic Engg.Drawings/do cuments 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	Schedule d End Date	Schedul ed Comple tion (In %)	Completi on up to previous month (In %) (A)	This month Completi on (In%) (B)	Total Comple tion (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%	100%	0%	100%
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%	100%	0%	100%

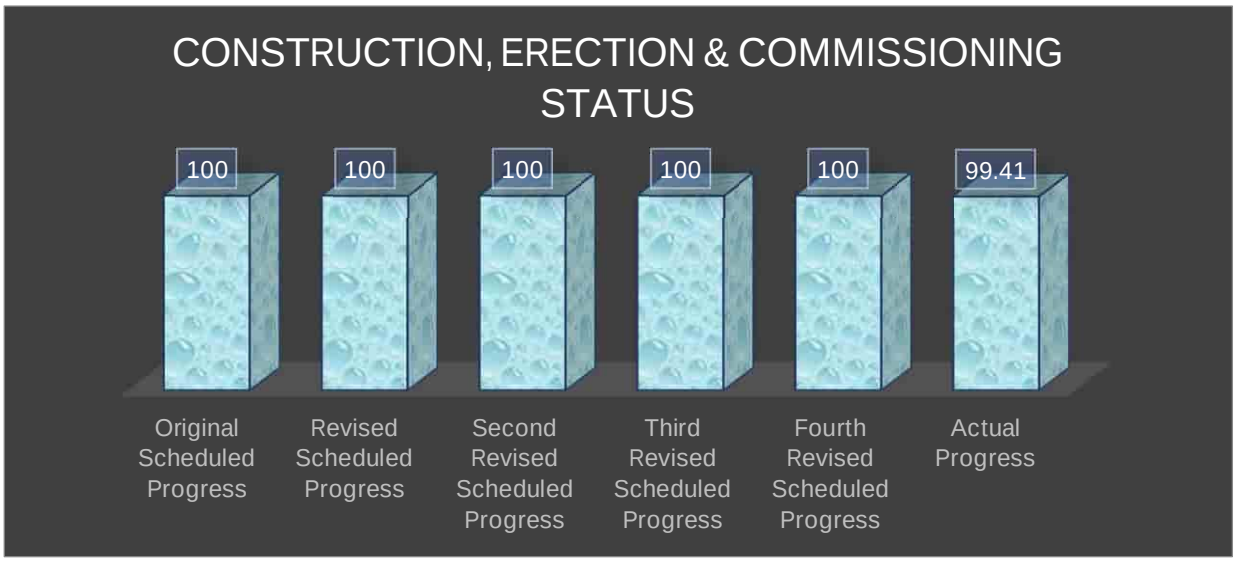
7.1.3 Procurement & Supply status

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%	100%
3.	Electrical and C&I	01-03-20	30-09-22	100%	100%	0%	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%	100%
7.	Tube settler	01-11-20	25-04-22	100%	100%	0%	100%
8.	Screen (Coarse & fine)	01-12-20	25-04-22	100%	100%	0%	100%
9.	Grit removal system	01-12-20	25-04-22	100%	100%	0%	100%
10.	Blowers	01-11-20	15-10-22	100%	100%	0%	100%
11.	Volute press/ STE	15-01-21	31-01-22	100%	100%	0%	100%
12.	Diffuser	15-01-21	30-04-21	100%	100%	0%	100%
13.	Media/ Bio module	01-10-20	25-10-20	100%	100%	0%	100%
14.	Supply of pipes	15-01-21	15-10-22	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)
15.	Chlorination	15-01-21	31-03-22	100%	100%	0%	100%
16.	Valves & Gates	15-01-21	10-11-22	100%	100%	0%	100%
17.	Other misc. Material	01-11-20	31-08-22	100%	100%	0%	100%
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%	100%	0%	100%

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%	100%
3.	Finalization & Mobilization of Civil Contractor (Jhunsi)	01-04-20	30-04-20	100%	100%	0%	100%
4.	Finalization & Mobilization of Mech. Contractor	01-01-21	18-11-21	100%	100%	0%	100%
5.	Finalization & Mobilization of Electrical Contractor	01-01-21	15-04-22	100%	100%	0%	100%
6.	Finalization & Mobilization of C&I Contractor	01-01-21	15-04-22	100%	100%	0%	100%
7.	Arrangement of Construction Power & Water and Site Office	01-06-20	30-06-20	100%	100%	0%	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%	100%
9.	Dismantling of existing structure	01-01-20	31-01-20	100%	100%	0%	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%	100%
12.	Boulder filling work	15-03-20	10-10-20	100%	100%	0%	100%
13.	PCC work	01-10-20	09-10-20	100%	100%	0%	100%
14.	RCC upto completion	01-10-20	31-10-21	100%	100%	0%	100%
15.	Other Misc Works	01-01-22	15-01-23	100%	100%	0%	100%
16.	Hydrotesting	15-01-22	25-04-22	100%	100%	0%	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%	100%
19.	PCC work	01-02-21	28-02-21	100%	100%	0%	100%
20.	RCC upto completion	01-02-21	20-04-22	100%	100%	0%	100%
21.	Other Misc Works	16-04-22	20-01-23	100%	100%	0%	100%
22.	Hydrotesting	25-07-22	20-08-22	100%	100%	0%	100%
23.	Main Process Building	01-03-21	20-01-23				
24.	Excavation	01-03-21	10-11-21	100%	100%	0%	100%
25.	Rubble soling/ Stone filling work	03-07-21	20-11-21	100%	100%	0%	100%
26.	PCC	10-07-21	10-12-21	100%	100%	0%	100%
27.	Structure completion (Expect finishing works)	20-07-21	10-11-22	100%	100%	0%	100%
28.	Other Misc Works	10-11-22	20-01-23	100%	100%	0%	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%	100%
32.	PCC	25-11-21	05-12-21	100%	100%	0%	100%
33.	RCC upto completion	05-12-21	15-11-22	100%	100%	0%	100%
34.	Hydrotesting	15-11-22	25-11-22	100%	100%	0%	100%
35.	Boundary wall	01-12-22	20-01-23	100%	100%	0%	100%
36.	Staff quarter	01-12-22	20-01-23	100%	100%	0%	100%
37.	Other Misc Works	15-06-22	20-01-23	100%	100%	0%	100%
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%	100%
40.	PCC	28-03-21	30-04-21	100%	100%	0%	100%
41.	RCC work upto completion	01-04-21	30-07-22	100%	100%	0%	100%
42.	Other Misc Works	01-05-22	20-01-23	100%	100%	0%	100%
43.	Hydrotesting	10-08-22	20-08-22	100%	100%	0%	100%
44.	Staff quarter	01-09-20	15-01-23	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)
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				
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%	100%	0%	100%
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%	100%	0%	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%	100%	0%	100%
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%	100%	0%	100%
70.	Other misc. work	20-08-22	30-01-23	100%	100%	0%	100%
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%	100%
74.	Instrumentation works	15-12-22	30-01-23	100%	100%	0%	100%
75.	CCTV	01-01-23	30-01-23	100%	100%	0%	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%	100%	0%	100%
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%	100%	0%	100%
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%	100%	0%	100%
87.	Other misc. work	20-12-22	30-01-23	100%	100%	0%	100%
88.	Commissioning of Mech., Electrical and C&I	30-01-23	31-01-23	100%	100%	0%	100%
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		100%	0%	100%
91.	COD	30-04-23	30-04-23		100%	0%	100%
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%	100%	0%	100%
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%	100%	0%	100%
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%	100%	0%	100%
139.	Pipe laying (Rising Main & Gravity Main)	16-01-21	20-09-22				
140.	Rising main	16-01-21	15-09-22				

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				
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%	100%	0%	100%
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%	100%	0%	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%	100%	0%	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%	100%	0%	100%
164.	Other misc. work	01-07-22	30-01-23	100%	100%	0%	100%
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%	100%	0%	100%
169.	Instrumentation works	01-07-22	30-11-22	100%	100%	0%	100%
170.	CCTV	01-12-22	30-01-23	100%	100%	0%	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%	100%	0%	100%
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%	100%	0%	100%
180.	Other misc. work	15-07-22	30-01-23	100%	100%	0%	100%
181.	Commissioning of Mech., Electrical and C&I	30-01-23	31-01-23	100%	100%	0%	100%
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		100%	0%	100%
184.	COD	30-04-23	30-04-23		100%	0%	100%
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%	100%	0%	100%
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%	100%	0%	100%
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%	100%	0%	100%
205.	Hydro testing	01-08-22	10-09-22	100%	100%	0%	100%
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%	100%	0%	100%
210.	Other finishing work	01-11-22	30-01-23	100%	75%	5%	80%
211.	Hydro testing	10-12-22	20-12-22	100%	100%	0%	100%
212.	Boundary wall	15-12-22	30-01-23	100%	0%	0%	0%
213.	Staff quarter	20-11-22	30-01-23	100%	100%	0%	100%
214.	Other Misc. works	15-11-22	30-01-23	100%	80%	0%	80%
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%	100%	0%	100%
220.	Hydro testing	01-07-22	15-07-22	100%	100%	0%	100%
221.	Staff quarter	01-09-20	30-11-22	100%	100%	0%	100%
222.	Other Misc. works	01-07-22	30-01-23	100%	90%	0%	90%
223.	Pipe laying (Rising Main & Gravity Main)	15-11-21	04-01-23				
224.	Rising main	15-11-21	25-12-22				
225.	Excavation, Laying & Jointing, Backfilling/ Restoration works	15-11-21	15-12-22	100%	100%	0%	100%
226.	Hydro testing	05-12-22	25-12-22	100%	100%	0%	100%
227.	Gravity Main	16-01-22	04-01-23				
228.	Excavation, Laying & Jointing, Backfilling/ Restoration works	16-01-22	20-12-22	100%	100%	0%	100%
229.	Hydro testing	15-12-22	04-01-23	100%	95%	0%	95%
230.	Other works	01-02-20	30-01-23				

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)
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%	25%	0%	25%
233.	Mechanical Erection- STP unit	01-04-22	30-01-23				
234.	Pumps	20-11-22	20-01-23	100%	100%	0%	100%
235.	Lamella clarifier/ Tube settler	01-04-22	30-10-22	100%	100%	0%	100%
236.	Fire fighting System	01-01-23	30-01-23	100%	100%	0%	100%
237.	Chlorination	20-11-22	30-01-23	100%	100%	0%	100%
238.	Grit removal system	01-12-22	30-01-23	100%	100%	0%	100%
239.	Blowers & Diffuser	01-07-22	31-12-22	100%	100%	0%	100%
240.	Screens	20-11-22	31-12-22	100%	100%	0%	100%
241.	Piping, Valves & Gates	01-07-22	25-01-23	100%	100%	0%	100%
242.	Media Installation/ Bio module	15-04-22	25-12-22	100%	100%	0%	100%
243.	Other misc. work	01-12-22	30-01-23	100%	100%	0%	100%
244.	Mechanical Erection- SPS & MPS	20-10-21	30-01-23				
245.	Pumps	20-11-22	20-01-23	100%	100%	0%	100%
246.	Screens	01-12-22	15-01-23	100%	85%	15%	100%
247.	Piping, Valves & Gates	20-10-21	30-01-23	100%	100%	0%	100%
248.	Other misc. work	01-12-22	30-01-23	100%	95%	5%	100%
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%	90%	0%	90%
253.	Instrumentation works	01-11-22	30-01-23	100%	90%	5%	95%
254.	CCTV	01-11-22	30-01-23	100%	100%	0%	100%
255.	Cable laying	01-11-22	30-01-23	100%	100%	0%	100%
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%	90%	0%	90%
259.	Electrical and C&I- SPS & MPS	01-11-22	31-01-23				
260.	Transformer Installation	01-11-22	30-01-23	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)
261.	HT/LT Panel erection	15-11-22	30-01-23	100%	100%	0%	100%
262.	Cable laying	15-11-22	30-01-23	100%	100%	0%	100%
263.	DG Installation	15-11-22	30-01-23	100%	100%	0%	100%
264.	PLC Panel & Online monitoring system	15-11-22	30-01-23	100%	90%	0%	90%
265.	Other misc. work	15-11-22	30-01-23	100%	80%	10%	90%
266.	Commissioning of Mech., Electrical and C&I	31-01-23	31-01-23	100%	80%	10%	90%
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		100%	0%	100%
269.	COD	30-04-23	30-04-23		100%	0%	100%

7.1.7 Package-I status

Naini-II Facility COD Letter

OFFICE OF THE SUPERINTENDING ENGINEER,
CIRCLE OFFICE,
U.P. JAL NIGAM(RURAL), PRAYAGRAJ
Email [illegible]

Letter no. 87/PWPL/35 Dated: 11/08 /2023

To,

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

Subject: Design, Build, Rehabilitate, Finance, Operate and Transfer Sewage Treatment Plants (STPs) along with Associated Infrastructure with operation and maintenance period of 15 Years under Hybrid Annuity Based PPP model in Phaphamau, Jhunsi, Naini-II, Naini-I, Salori, Numayadahi, Rajapur, Ponghat & Kodara at Prayagraj (erstwhile Allahabad), Uttar Pradesh, India - **Issuance of Commercial Operations Date for Naini-II facility under Package-I.**

Ref:
1) Concessionaire agreement No. 31/GM/2018/19 dated 11th January 2019
2) Effective Date declaration dated 16th Sept 2019
3) PWPL Letter No PWPL/UPJN/PRAYAGRAJ/SITE/862 dated 30th Nov 2022
4) PWPL Letter No PWPL/UPJN/PRAYAGRAJ/SITE/905 dated 11th May 2023
5) AECOM Letter No. AIPL/NMCG/PRAYAG/1607 dated 18th May 2023
6) NMCG Letter No. F. No. Pr 23012/2/2021 dated 26th May 2023
7) PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/906 dated 30th May 2023
8) AECOM Letter No AIPL/NMCG/PRAYAG/1619 dated 08th Jun 2023.
9) PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/911 dated 17th June 2023
10) UPJN Letter No. 68/PWPL/24 dated 19th Jun 2023.
11) UPJN Letter No. 1330/W-9/141 dated 20th Jun 2023.
12) NMCG Letter no. F. No. Pr-12012/6/2018/PPP/NMCG dated 07th Jul 2023.
13) UPJN letter no. 75/PWPL/19 dated 14th July 2023
14) PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/917 dated 18th July 2023
15) AECOM letter no. AIPL/NMCG/PRAYAG/1637 dated 24th July 2023
16) UPJN Letter No: 83/PWPL/32 dated 27th July 2023
17) PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/921 dated 02nd Aug 2023
18) UPJN Letter No: 85/PWPL/33 dated 02nd Aug 2023

Dear Sir,

With reference to the above cited subject, it is to be noted that we have issued the 8th Milestone completion certificate vide letter mentioned at Sr. no. 13, Construction completion certificate vide letter mentioned at Sr. no. 16 and Trial Run completion certificate vide letter mentioned at Sr. no. 18 after the detailed assessment of the documents provided from the Concessionaire.

In view of the same, we are hereby issuing the COD certificate to the Concessionaire. Details of the same are mentioned below:

Sl. No.	Description	Commercial Operations Date (COD)
1	Construction Works of Naini-II facility under Package-I	19.02.2023

This completion certificate is being issued on the basis of instructions received from NMCG vide letter mentioned at Sr. no. 6 & 12 and undertaking submitted by PWPL vide letter mentioned at Sr. no. 17.

Furthermore, all the conditions mentioned in Trial run completion certificate remains applicable.

Yours Faithfully

Project Manager
Ganga Pollution Control Unit
UPJN (Rural), Prayagraj

Executive Engineer
Division office (E&M)
UPJN (Rural), Prayagraj

Superintending Engineer
Circle office, UPJN (Rural), Prayagraj

Copy Forwarded to Following for information and necessary action:

1. Executive Director (Project), NMCG, New Delhi
2. Additional Project director, SMCG Lucknow.
3. Chief Engineer (Ganga), UP Jal Nigam (Rural) Lucknow
4. Chief Engineer (Kanpur Zone), UP Jal Nigam (Rural) Lucknow
5. Shri Rajat Gupta, NMCG, New Delhi
6. Project Manager, GPCU, UP Jal Nigam (Rural), Prayagraj
7. Executive Engineer, Division office (E&M), UP Jal Nigam (Rural), Prayagraj
8. M/s. AECOM India Pvt Ltd.

Superintending Engineer
Circle office, UPJN (Rural), Prayagraj

Commercial Operations Date was announced on 11.08.2023 vide letter no. 87/PWPL (Adani)/35

Phaphamau Facility COD Letter

OFFICE OF THE SUPERINTENDING ENGINEER,
CIRCLE OFFICE,
U.P. JAL NIGAM(RURAL), PRAYAGRAJ
Email -se_2circle@rediffmail.com

Letter no. 88/PWPL/36 Dated: 11/08/2023

To,

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

Subject: Design, Build, Rehabilitate, Finance, Operate and Transfer Sewage Treatment Plants (STPs) along with Associated Infrastructure with operation and maintenance period of 15 Years under Hybrid Annuity Based PPP model in Phaphamau, Jhunsi, Naini-II, Naini-I, Salori, Numayadahi, Rajapur, Ponghat & Kodara at Prayagraj (erstwhile Allahabad), Uttar Pradesh, India- **Issuance of Commercial Operations Date for Phaphamau facility under Package-I.**

Ref:
1) Concessionaire agreement No. 31/GM/2018/19 dated 11th January 2019
2) Effective Date declaration dated 16th Sept 2019
3) PWPL Letter No PWPL/UPJN/PRAYAGRAJ/SITE/871-A dated 30th Dec 2022
4) PWPL Letter No PWPL/UPJN/PRAYAGRAJ/SITE/905 dated 11th May 2023
5) AECOM Letter No. AIPL/NMCG/PRAYAG/1607 dated 18th May 2023
6) NMCG Letter No. F. No. Pr 23012/2/2021 dated 26th May 2023
7) PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/907 dated 30th May 2023
8) AECOM Letter No AIPL/NMCG/PRAYAG/1620 dated 08th Jun 2023.
9) PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/911 dated 17th June 2023
10) UPJN Letter No. 69/PWPL/25 dated 19th Jun 2023
11) UPJN Letter No. 1329/W-9/140 dated 20th Jun 2023
12) NMCG Letter no. F. No. Pr-12012/6/2018/PPP/NMCG dated 07th Jul 2023.
13) UPJN letter no. 76/PWPL/30 dated 14th July 2023
14) PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/918 dated 18th July 2023
15) AECOM letter no. AIPL/NMCG/PRAYAG/1638 dated 24th July 2023
16) UPJN Letter No. 82/PWPL/31 dated 27th July 2023
17) PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/921 dated 02nd Aug 2023
18) UPJN Letter No. 86/PWPL/34 dated 02nd Aug 2023

Dear Sir,

With reference to the above cited subject, it is to be noted that we have issued the 8th Milestone completion certificate vide letter mentioned at Sr. no. 13, Construction completion certificate vide letter mentioned at Sr. no. 16 and Trial Run completion certificate vide letter mentioned at Sr. no. 18 after the detailed assessment of the documents provided from the Concessionaire.

In view of the same, we are hereby issuing the COD certificate to the Concessionaire. Details of the same are mentioned below:

Sl. No.	Description	Commercial Operations Date (COD)
1	Construction Works of Phaphamau facility under Package-I	28.03.2023

This completion certificate is being issued on the basis of instructions received from NMCG vide letter mentioned at Sr. no. 6 & 12 and undertaking submitted by PWPL vide letter mentioned at Sr. no. 17.

Furthermore, all the conditions mentioned in Trial run completion certificate remain applicable.

Yours Faithfully

Project Manager
Ganga Pollution Control Unit
UPJN (Rural), Prayagraj

Executive Engineer
Division office (E&M)
UPJN (Rural), Prayagraj

Superintending Engineer
Circle office, UPJN (Rural), Prayagraj

Copy Forwarded to Following for information and necessary action:

1. Executive Director (Project), NMCG, New Delhi
2. Additional Project director, SMCG Lucknow.
3. Chief Engineer (Ganga), UP Jal Nigam (Rural) Lucknow
4. Chief Engineer (Kanpur Zone), UP Jal Nigam (Rural) Lucknow
5. Shri Rajat Gupta, NMCG, New Delhi
6. Project Manager, GPCU, UP Jal Nigam (Rural), Prayagraj
7. Executive Engineer, Division office (E&M), UP Jal Nigam (Rural), Prayagraj
8. M/s. AECOM India Pvt Ltd.

Superintending Engineer
Circle office, UPJN (Rural), Prayagraj

Commercial Operations Date was announced on 11.08.2023 vide letter no. 88/PWPL (Adani)/36

Jhunshi Facility COD Letter

OFFICE O F THE SUPERINTENDING ENGINEER,
CIRCLE OFFICE,
U.P. JAL NIGAM(RURAL), PRAYAGRAJ
Email –se_2circle@rediffmail.com

Letter no. 110 / 10.W.P.L./46 Dated: 26/09/2023

To,

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

Subject: Design, Build, Rehabilitate, Finance, Operate and Transfer Sewage Treatment Plants (STPs) along with Associated Infrastructure with operation and maintenance period of 15 Years under Hybrid Annuity Based PPP model in Phaphamau, Jhunsi, Naini-II, Naini-I, Salori, Numayadahi, Rajapur, Ponghat & Kodara at Prayagraj (erstwhile Allahabad), Uttar Pradesh, India - **Issuance of Commercial Operations Date for Jhunsi facility under Package-I.**

Reference:

1. Concession Agreement dated 11th Jan 2019
2. PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/896 dated 29th Mar 2023
3. PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/901 dated 11th Apr 2023
4. PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/902 dated 17th Apr 2023
5. NMCG Letter No. F. No. Pr 23012/2/2021 dated 26th May 2023
6. PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/915 dated 13th July 2023
7. PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/921 dated 25th July 2023
8. PWPL letter no. PWPL/UPJN/PRAYAGRAJ/O&M/691 dated 26th Aug 2023
9. AECOM letter no. AIPL/NMCG/PRAYAG/1645 dated 28th Aug 2023
10. UPJN letter no. 96/PWPL/38 dated 29th Aug 2023
11. NMCG Letter No. F. No. Pr 12012/6/2018 dated 05th Sep 2023
12. PWPL letter no. PWPL/UPJN/PRAYAGRAJ/SITE/925 dated 05th Sep 2023
13. AECOM letter no AIPL/NMCG/PRAYAG/1653 dated 13th Sep 2023.
14. UPJN letter no 104/PWPL/40 dated 18th Sep 2023.
15. PWPL Letter no. PWPL/UPJN/PRAYAGRAJ/SITE/927 dated 18th Sep 2023
16. AECOM letter no. AIPL/NMCG/PRAYAG/1656 dated 20th Sep 2023.
17. UPJN Letter no. 105/PWPL/41 dated 21st Sep 2023
18. UPJN Letter no. 109/PWPL/45 dated 23rd Sep 2023

Dear Sir,

With reference to the above cited subject, it is to be noted that we have issued the 8th Milestone completion certificate vide letter mentioned at Sr. no. 14, Construction completion certificate vide letter mentioned at Sr. no. 17 and Trial Run completion certificate vide letter mentioned at Sr. no. 18 after the detailed assessment of the documents provided by you.

In view of the same, we are hereby issuing the COD certificate to you. Details of the same are mentioned below:

Sl. No.	Description	Commercial Operations Date (COD)
1	Construction Works of Jhunsi facility under Package-I	01.08.2023

This Commercial Operations Date certificate is being issued on the basis of instructions received from NMCG vide letter mentioned at Sr. no. 5 & 11.

Furthermore, all the conditions mentioned in Trial run completion certificate remains applicable.

(Praveen Kutti)
Superintending Engineer

Copy Forwarded to Following for information and necessary action:

1. Executive Director (Project), NMCG, New Delhi
2. Additional Project director, SMCG Lucknow.
3. Chief Engineer (Ganga), UP Jal Nigam (Rural) Lucknow
4. Chief Engineer (Kanpur Zone), UP Jal Nigam (Rural) Lucknow
5. Shri Rajat Gupta, NMCG, New Delhi
6. Project Manager, GPCU, UP Jal Nigam (Rural), Prayagraj
7. Executive Engineer, Division office (E&M), UP Jal Nigam (Rural), Prayagraj
8. M/s. AECOM India Pvt Ltd.

Superintending Engineer

Commercial Operations Date was announced on 26.09.2023 vide letter no. 110/PWPL/46

KPI REPORTS OF PACKAGE - I,

ACTION TAKEN REPORT AND RECOMMENDATIONS ARE PROVIDED 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 20.09.2021 vide letter no. 2484/PWPL (Adani)/496

KPI REPORTS OF PACKAGE - II,

ACTION TAKEN REPORT AND RECOMMENDATIONS ARE PROVIDED 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 0532-2684999

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

02-11-2020

General Manager

Endt No. & and date as above:

Copy to following:

1- E.D.(Projects), NMCG, New Delhi.
2- MD, UPJN 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 REPORTS OF PACKAGE - III,

ACTION TAKEN REPORT AND RECOMMENDATION ARE PROVIDED 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 December'2023.

Sr. No.	Site Visit & Meeting with UPJN / NMCG / PWPL	Date	Attendees	Description
1.	Site inspection of Phaphamau STP	01-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
2.	Site inspection of Rajapur STP	01-Dec-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
3.	Site inspection of Salori STP	02-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
4.	Site inspection of Kodra STP	04-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
5.	Site inspection of Ponghat STP	04-Dec-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
6.	Site inspection of Naini-I STP	05-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
7.	Site inspection of Numayadahi STP	06-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
8.	Site inspection of Jhunsi STP	07-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M, O&M activities of plant
9.	Site inspection of Rajapur STP	08-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
10.	Site inspection of Naini-II STP	09-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
11.	Site inspection of Salori STP	09-Dec-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
12.	Site inspection of Naini-II STP	11-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
13.	Site inspection of Naini-II STP	12-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant

14.	Site inspection of Kodra STP	12-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
15.	Site inspection of Ponghat STP	12-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
16.	Site inspection of Phaphamau STP	13-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
17.	Site inspection of Numayadahi STP	13-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
18.	Site inspection of Naini-I STP	14-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
19.	Site inspection of Rajapur STP	15-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
20.	Site inspection of Salori STP	16-Dec-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
21.	Site inspection of Kodra STP	18-Dec-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
22.	Site inspection of Ponghat STP	18-Dec-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
23.	Site inspection of Phaphamau STP	19-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
24.	Site inspection of Jhunsi STP	21-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M, O&M activities of plant
25.	Site inspection of Naini-I STP	22-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
26.	Site inspection of Rajapur STP	23-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
27.	Site inspection of Numayadahi STP	26-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
28.	Site inspection of Salori STP	27-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
29.	Site inspection of Kodra STP	28-Dec-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant

30.	Site inspection of Ponghat STP	28-Dec-23	Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing O&M activities of plant
31.	Site inspection of Phaphamau STP	28-Dec-23	Mr. Gaurav Gupta	Inspection, supervision and monitoring of ongoing O&M activities of plant
32.	Site inspection of Jhunsi STP	29-Dec-23	Mr. Gaurav Gupta Mr. Sudhir Tomar	Inspection, supervision and monitoring of ongoing E&M, O&M activities of plant

10. Photos of Meetings / Site Visits and Activities

PACKAGE - I
PHAPHAMAU FACILITY

Main Plant view of 14 MLD Phaphamau STP

Process Building: Current status (Functional)

Shantipuram MPS: Current status (Functional)

FCR Tank: Current status (Functional)

FCR Tank

Basna Nalla SPS Current status (Functional)

NAINI-II FACILITY

Naini-II STP Process aera.

NAINI-II MPS– Current status (Functional)

FCR Tank – Current status (Functional)

Sludge Dewatering Unit – Current status (Functional)

Mahewaghat SPS– Current status (Functional)

Mawaiya SPS– Current status (Functional)

JHUNSI FACILITY

Jhunsi MPS – Current Status (Functional)

Tube settler– Current Status (Functional)

JHUNSI FACILITY

FCR Tank – Current status (Functional)

Sludge Dewatering Unit – Current status (Functional)

Blower Unit- Current status (Functional)

Shastri Bridge SPS – OutSide finishing Work is 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/1693	Submission of O & M Monthly Progress report for the month of October 2023 for Package - III Facility	2-Dec-2023	S.E.-2 Circle - UPJN
2.	AIPL/NMCG/PRAYAG/1694	Submission of O & M Monthly Progress report of Phaphamau Facility under Package – I for the month of March to June 2023	6-Dec-2023	S.E.-2 Circle - UPJN
3.	AIPL/NMCG/PRAYAG/1695	Submission of O & M Monthly Progress report for the month of Feb 2023 (19th Feb, 2023 to 28th Feb, 2023) of Naini-II Facility under Package – I	8-Dec-2023	S.E.-2 Circle - UPJN
4.	AIPL/NMCG/PRAYAG/1696	Submission of O & M Monthly Progress report for the month of March 2023 of Naini-II Facility under Package – I	8-Dec-2023	S.E.-2 Circle - UPJN
5.	AIPL/NMCG/PRAYAG/1697	Submission of O & M Monthly Progress report for the month of April 2023 of Naini-II Facility under Package – I	8-Dec-2023	S.E.-2 Circle - UPJN
6.	AIPL/NMCG/PRAYAG/1698	Submission of O & M Monthly Progress report for the month of May 2023 of Naini-II Facility under Package – I	8-Dec-2023	S.E.-2 Circle - UPJN
7.	AIPL/NMCG/PRAYAG/1699	Project Engineer Services for Prayagraj STP Project on Hybrid Annuity based PPP Mode. – O&M Bill of Sep 23	8-Dec-2023	NMCG, New Delhi
8.	AIPL/NMCG/PRAYAG/1700	Project Engineer Services for Prayagraj STP Project on Hybrid Annuity based PPP Mode - O&M Bill of Oct 23	8-Dec-2023	NMCG, New Delhi
9.	AIPL/NMCG/PRAYAG/1701	Submission of O & M Tax Invoice of 12th quarter (August 2023 – Oct 2023) of Package - III	15-Dec-2023	S.E.-2 Circle - UPJN

Sr. No.	PE Transmittal/ Ref No	Description	Outward Date	To (Organization)
10.	AIPL/NMCG/PRAYAG/1702	Project Engineer Services for Prayagraj STP Project on Hybrid Annuity based PPP Mode – Release of payment for 2nd Invoice of Milestone-8.	21-Dec-2023	NMCG, New Delhi
11.	AIPL/NMCG/PRAYAG/1703	Submission of O & M Monthly Progress report for the month of November-23 of Package II Facilities	22-Dec-2023	S.E.-2 Circle - UPJN
12.	AIPL/NMCG/PRAYAG/1704	Submission of O & M Monthly Progress report for the month of November-23 of Package III Facilities	26-Dec-2023	S.E.-2 Circle - UPJN
13.	AIPL/NMCG/PRAYAG/1705	Submission of O & M Monthly Progress report for the month of June 2023 of Naini II Facility	28-Dec-2023	S.E.-2 Circle - UPJN
14.	AIPL/NMCG/PRAYAG/1706	Inspection Reports of Package-II facilities	28-Dec-2023	S.E.-2 Circle - UPJN
15.	AIPL/NMCG/PRAYAG/1707	Inspection Reports of Package-III facilities	28-Dec-2023	S.E.-2 Circle - UPJN
16.	AIPL/NMCG/PRAYAG/1708	Inspection Reports of Package-I facilities	30-Dec-2023	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/O&M/750	Regarding change of applicable GST percentage for Package - I, II, III along with O &M.	01-Dec-23	Prayagraj water private limited
2.	PWPL/UPJN/PRAYAGRAJ/O&M/751	Shutdown required at Ghagharnala pumping station for de-silting	02-Dec-23	Prayagraj water private limited
3.	147/PWPL/(PRAYAGRAJ)/55	Regarding Development of one Pink Sewage Treatment Plant (STP) in support of women empowerment	02-Dec-23	S.E.-2 Circle (Rural)-UPJN
4.	PWPL/UPJN/PRAYAGRAJ/O&M/752	Submission of O & M Tax Invoice of 12th quarter (August 2023 – Oct 2023) of Package - III	04-Dec-23	Prayagraj water private limited
5.	PWPL/UPJN/PRAYAGRAJ/O&M/753	Submission of O & M Monthly Progress report for the month of Feb 2023 (19th Feb, 2023 to 28th Feb, 2023) of Naini-II Facility under Package – I	05-Dec-23	Prayagraj water private limited
6.	PWPL/UPJN/PRAYAGRAJ/O&M/754	Submission of O & M Monthly Progress report for the month of March 2023 of Naini-II Facility under Package – I	05-Dec-23	Prayagraj water private limited
7.	PWPL/UPJN/PRAYAGRAJ/O&M/755	Submission of O & M Monthly Progress report for the month of April 2023 of Naini-II Facility under Package – I	05-Dec-23	Prayagraj water private limited
8.	PWPL/UPJN/PRAYAGRAJ/O&M/756	Submission of O & M Monthly Progress report for the month of May 2023 of Naini-II Facility under Package – I	05-Dec-23	Prayagraj water private limited

Sr. No.	PWPL / UPJN Transmittal reference number	Description	Date	From
9.	PWPL/UPJN/PRAYAGRAJ/O&M/757	Regarding diffuser maintenance of FCR at Naini-II.	08-Dec-23	Prayagraj water private limited
10.	PWPL/UPJN/PRAYAGRAJ/O&M/758	Submission of O & M Tax Invoice of 1st quarter (Feb 2023 – May 2023) of Naini II facility under Package - I	08-Dec-23	Prayagraj water private limited
11.	PWPL/UPJN/PRAYAGRAJ/O&M/758	Submission of O & M Monthly Progress report for the month of November-23 of Package III Facilities	09-Dec-23	Prayagraj water private limited
12.	PWPL/UPJN/PRAYAGRAJ/O&M/759	Submission of O & M Monthly Progress report for the month of November-23 of Package II Facilities	11-Dec-23	Prayagraj water private limited
13.	PWPL/UPJN/PRAYAGRAJ/O&M/760	Submission of O & M Monthly Progress report for the month of June 2023 of Naini II Facility	14-Dec-23	Prayagraj water private limited
14.	PWPL/UPJN/PRAYAGRAJ/O&M/761	Excess Flow receiving at Sewage Treatment Plants & Sewage Pumping Stations under Package II & III (Flow Record for the month of Nov 2023)	15-Dec-23	Prayagraj water private limited
15.	PWPL/UPJN/PRAYAGRAJ/O&M/762	Submission of O & M Tax Invoice of 12th quarter (August 2023 – Oct 2023) of Package - III	18-Dec-23	Prayagraj water private limited
16.	155/PWPL/(PRAYAGRAJ)/60	Regarding O & M Payment of 12th Quarter of Package-III	20-Dec-23	S.E.-2 Circle (Rural)-UPJN
17.	156/PWPL/(PRAYAGRAJ)/61	Regarding O & M Payment of Differential Invoice of 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th and 10th Quarter of Package - III	20-Dec-23	S.E.-2 Circle (Rural)-UPJN

Sr. No.	PWPL / UPJN Transmittal reference number	Description	Date	From
18.	PWPL/UPJN/PRAYAGRAJ/O&M/763	Submission of O & M Monthly Progress report for the month of July 2023 of Naini II Facility	22-Dec-23	Prayagraj water private limited
19.	PWPL/UPJN/PRAYAGRAJ/SITE /935	Submission Reg. variation to scope of work for Jhunsi Facility location change under Package-I as per Clause 21 of Concession Agreement.	28-Dec-23	Prayagraj water private limited
20.	PWPL/UPJN/PRAYAGRAJ/O&M/764	Regarding Outlet flowmeter pipe dismantling and re-installation at Naini I STP	29-Dec-23	Prayagraj water private limited
21.	PWPL/UPJN/PRAYAGRAJ/O&M/766	Shutdown of Numayadahi STP and its associated infrastructures due to damage of Rising main pipe of Ghagharnala SPS	29-Dec-23	Prayagraj water private limited

13. EHS targets, Achievement & compliance report for the month of December 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. ANNEXURES

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-I

ACTION TAKEN REPORT AND KPI REPORT FOR PACKAGE-I

Table of Contents

1. JHUNSI STP AND ASSOCIATED INFRASTRUCTURE

1.1 KPI Report

JHUNSI STP, 16 MLD STP at Prayagraj
INLET FLOW & QUALITY REPORT

Date	Daily Feed Quantity MLD (Design-16 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)	
01-Dec-23	12010	12.01	7.83	7.90	160	17	346	40	316	17	NA	400	0.3	23.82	1300000	
02-Dec-23	10820	10.82	7.61	7.76	155	14	342	44	314	18	NA	500	0.2	23.21	1400000	
03-Dec-23	12670	12.67	7.81	7.67	160	18	338	42	318	15	NA	400	0.3	24.49	1100000	
04-Dec-23	12960	12.96	7.63	7.74	155	16	340	46	312	13	NA	600	0.3	23.92	1300000	
05-Dec-23	12580	12.58	7.73	7.46	165	19	336	42	317	15	NA	500	0.2	24.78	1400000	
06-Dec-23	11750	11.75	7.61	7.35	160	14	330	44	290	18	NA	400	0.2	24.67	1100000	
07-Dec-23	13910	13.91	7.58	7.32	155	16	336	40	285	16	NA	500	0.3	23.48	1300000	
08-Dec-23	12830	12.83	7.58	7.30	165	18	330	48	280	19	NA	600	0.3	24.33	1400000	
09-Dec-23	11540	11.54	7.20	6.72	155	14	336	42	275	17	NA	400	0.2	23.85	1200000	
10-Dec-23	13010	13.01	7.47	7.21	160	17	338	44	284	15	NA	500	0.3	24.09	1100000	
11-Dec-23	11380	11.38	7.53	7.46	155	18	330	46	280	19	NA	600	0.3	23.75	1200000	
12-Dec-23	11670	11.67	7.56	7.42	165	14	334	42	275	20	NA	400	0.2	23.55	1100000	
13-Dec-23	15220	15.22	7.61	7.53	160	19	332	44	270	22	NA	600	0.2	24.75	1400000	
14-Dec-23	16180	16.18	7.43	7.40	155	22	324	48	274	24	NA	500	0.3	24.11	1300000	
15-Dec-23	15960	15.96	7.46	7.50	160	20	332	40	270	22	NA	400	0.3	23.78	1100000	
16-Dec-23	14390	14.39	7.41	7.51	155	16	328	44	275	26	NA	700	0.2	24.76	1400000	
17-Dec-23	14040	14.04	7.40	7.55	160	18	336	48	278	19	NA	500	0.2	24.24	1200000	
18-Dec-23	12870	12.87	7.46	7.42	155	19	340	44	274	21	NA	400	0.3	23.82	1300000	
19-Dec-23	12420	12.42	7.08	7.18	165	14	336	40	272	20	NA	500	0.3	23.11	1100000	
20-Dec-23	12900	12.90	7.58	7.55	160	18	344	48	280	12	NA	600	0.2	24.54	1200000	
21-Dec-23	13230	13.23	7.61	7.53	155	14	340	44	284	16	NA	400	0.2	24.07	1100000	
22-Dec-23	13260	13.26	7.56	7.49	165	16	336	48	290	12	NA	500	0.3	23.57	1300000	
23-Dec-23	13320	13.32	7.47	7.50	160	19	332	44	288	14	NA	400	0.2	23.07	1400000	
24-Dec-23	13410	13.41	7.49	7.51	165	17	344	36	292	12	NA	600	0.3	24.69	1100000	
25-Dec-23	12240	12.24	7.71	7.41	160	15	340	40	302	16	NA	500	0.3	23.54	1200000	
26-Dec-23	13000	13.00	7.71	7.51	155	16	348	44	310	11	NA	400	0.3	23.94	1100000	
27-Dec-23	13700	13.70	7.54	7.44	160	18	344	48	295	14	NA	500	0.2	23.26	1200000	
28-Dec-23	12060	12.06	7.49	7.37	165	14	340	44	280	18	NA	600	0.3	24.71	1300000	
29-Dec-23	12530	12.53	7.51	7.37	160	16	336	40	290	16	NA	400	0.3	24.10	1400000	
30-Dec-23	12790	12.79	7.63	7.39	155	18	340	44	296	12	NA	500	0.3	23.83	1300000	
31-Dec-23	13300	13.30	7.53	7.49	165	19	344	40	280	14	NA	600	0.2	24.15	1100000	
Average	**13030.65**	**13.03**	**7.54**	**7.45**	**159.52**	**16.87**	**337.16**	**43.48**	**288.58**	**16.87**		**496.77**	**0.26**	**24.00**	**1238709.68**	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken Report

Month of Site Inspection	December 2023
Site Inspectors	1. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R), Prayagraj 2. Mr. Karunakar Singh, AE, UPJN(R), Prayagraj 3. Mr. Nirender, APE, GPCU, UPJN(R), Prayagraj 4. Mr. Jitender Yadav, JE, UPJN(R), Prayagraj 5. Mr. Gaurav Gupta, AECOM 6. Mr. Sudhir Tomar, AECOM 7. Mr. Teekam Singh, PWPL 8. Mr. Rahul Kumar Azaad, PWPL 9. Mr. Rahul Chaudhary, PWPL
Place(s) of Inspection	• 16 MLD Jhunsi STP • 16 MLD Jhunsi MPS • 16 MLD Shastri Bridge SPS

Visit was done on 28th November 2023, 7th December 2023, 21st December 2023 & 29th December2023 and following observations were made after action taken by Concessionaire on inspection report provided by Project Engineer for November-23

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Jhunsi STP	10.82 to 16.18
2	Jhunsi MPS	10.82 to 16.18
3	Shastri Bridge SPS	10.94 to 16.34

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	14 to 19 mg/l
2	TSS – Effluent	< 50 mg/l	13 to 26 mg/l
3	pH – Effluent	6.5 – 9.0	6.72 to 7.90
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.21 to 24.78 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 to 1400000 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)
1	Jhunsi Facility	3646 to 4522

Note: 1) Source for above data is site record for power consumption of STP/MPS/SPS.

- Status of tasks related to Construction phase:

A. Civil Works:

A1. Works as per Scope of Works given in Schedule-1 of Concession Agreement:

Sr. No.	Work description	Status
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.	Currently, RCC work, brick work, flooring work and plaster work is completed. Painting work is pending.
2	At Shastri Bridge SPS, construction of boundary wall and approach road is pending.	Work is pending.
3	At all 13 Interception and diversion points, arrangement for conveying sewage from existing nalla to the civil structure is pending.	Tapping of all I&Ds was completed except for Trivenipuram Nalla before flood. Currently, after receding of water level in river, sewage from all I&Ds is sent to Shastri Bridge SPS. The trunk sewer in between Savitri Nalla and Dham Nalla is choked, however Concessionaire is replacing this trunk sewer as the problem cannot be rectified but the work of laying new trunk sewer is not completed yet. Currently, temporary pumping arrangement is provided for transferring sewage, but this arrangement is not sufficient because sewage is overflowing from Savitri Nalla & Bhola Mandir Nalla during peak hours. Therefore, Concessionaire is required to rectify the problem at the earliest for ensuring 100% availability of the facility.
4	At all 13 Interception and diversion points, repairing work of civil structure which is damaged due to flood is pending.	Repairing work of civil structure was completed before flood however during inspection of I&D structures after receding of water level in river, it was found that minor repairing is required which is caused due to flood. Also, strengthening of retaining walls is required for ensuring 100% availability which is still pending.
5	At Shastri Bridge SPS, landscaping and site development work is pending.	Work is pending.
6	At Shastri Bridge SPS, installation of permanent type display/sign boards is pending.	Work is pending.
7	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 as per Schedule-1 in CA to avoid cutting of nearby land.

A2. Works related to or dependent on proposed Variation:

S. No.	Work Description	Status
1	At Jhunsi MPS, landscaping and site development work is pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is dependent on land filling which is part of variation.
2	At Jhunsi MPS, land filling work is pending	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is part of variation.
3	At Jhunsi MPS, construction of loading and unloading bay is pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is dependent on land filling which is part of variation.
4	At Jhunsi STP, construction of boundary wall is pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is part of variation.
5	At Jhunsi STP, land filling work is pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is part of variation.
6	At Jhunsi STP, construction works for Road & Drain are pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is dependent on land filling which is part of variation.
7	At Jhunsi STP, landscaping and development work for complete site is pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is dependent on land filling which is part of variation.
8	At Jhunsi STP, arrangements for rainwater harvesting are pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is dependent on land filling which is part of variation.
9	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.	Work is pending.

B. E&M Works:

B1 Works as per Scope of Works given in Schedule-1 of Concession Agreement:

Sr. No.	Work description	Status
1	At Shastri Bridge SPS, mechanical works are pending.	Completed
2	At Shastri Bridge SPS, electrical works are pending.	Outdoor lighting is pending.

Sr. No.	Work description	Status
3	At Shastri Bridge SPS, instrumentation works are pending.	Transmission of signal from SCADA system of Shastri Bridge SPS to Jhunsi STP is pending.
4	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.	As informed by Concessionaire, order of desired gates is placed, and purchase order is released. Gates will be received at site by the end of Dec-23 as per PO. However, this work is not part of scope of works given in Schedule-1 of Concession Agreement but must be done as per site requirement at no extra cost to UPJN.
5	At Jhunsi MPS, installation of differential level transmitter for mechanical screen is pending.	Commissioning is completed. However, testing for the same is pending as mechanical screen is under maintenance.
6	At Jhunsi MPS, installation of outlet flowmeter is completed but it is not working.	Completed
7	At Jhunsi STP, installation of plants for FCR tanks are pending.	Completed
8	At Jhunsi STP, installation of differential level transmitter for mechanical screen is pending.	Completed
9	At Jhunsi STP, installation of inlet and outlet analysers is pending.	Validation and calibration for both analyzers are completed. SCADA reports are under observation. Also, values of TSS from outlet analyzer are not recorded in SCADA system.
10	At Jhunsi STP, installation of DO analysers for FCR tanks is pending.	Testing is completed. It is under observation.
11	At Jhunsi STP, installation of chlorine analyser at the outlet of STP is pending	Testing is completed. It is under observation.
12	At Jhunsi STP, installation of outlet flowmeter is pending.	Commissioning is completed. Calibration for the same is pending.
13	At Jhunsi STP, erection & commissioning works of SCADA system are pending.	• All works are completed however, report generation in SCADA related to flow and run hour of equipment are not accurate and fine tuning of online monitoring system is required. SCADA reports of KPIs are under observation after completion validation for both analyzers. • Data transfer from SCADA system of associated infrastructure to SCADA system of STP is not started yet.
14	At Jhunsi STP, installation of asset management system is not started yet.	Work is pending.
15	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.	Currently the arrangement is working fine but if any requirement arises in future, Concessionaire is required to do the needful for the same at no extra cost to UPJN.

B2 <u>Works related to or dependent on proposed Variation:</u>

S. No.	Work Description	Status

1	At Jhunsi STP, construction of earthing pits is pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is dependent on land filling which is part of variation.
2	At Jhunsi STP, installation of permanent lights inside and outside the units for complete site are pending.	Work is pending. However as informed by Concessionaire, same will be completed once the variation related to Jhunsi facility is approved as this item is dependent on land filling which is part of variation.

- Status of various units & records at site related to O&M phase:

1. Data transfer from online analyzer at the outlet of STP to CPCB servers is pending.
2. Flowmeter at inlet of STP is working.
3. Flowmeter at outlet of STP is working. There is variation in between inlet and outlet flow which is more than water loss shown for the STP. Concessionaire is required to resolve this problem.
4. Online analyzer at inlet of STP is working.
5. Online analyzer at outlet of STP is working but values of TSS are not recorded in SCADA system.
6. All Grit Removal Units are working.
7. At PTU, EOT is not working. Electrical Connection is pending.
8. Both Mechanical Screens are working. Currently screens are running in auto mode through timer.
9. All FCR units are working. Shade on top of FCRs is not installed yet for better maintenance of plants during summer season.
10. Minor Seepages from FCR & some other units can be seen, this must be rectified.
11. There is water logging in area between FCR and Tube settler tank for which a temporary submersible pump is installed for dewatering purpose however Concessionaires is required to provide permanent solution for the same.
12. DO analyzers for all FCR units are working.
13. All aeration blowers are working.
14. All tube settler units are working. Rectification of problem related to operating drain vales must be completed at the earliest. Also, problem of filling of water in pits for drain valves must be rectified for ease in operation and maintenance of drain valves.
15. Quality of effluent is Satisfactory.
16. Sludge dewatering unit was in operation. Poly preparation unit was in operation.
17. Both dewatering feed pumps are working.
18. Both chlorinators are working. Both booster pumps are working.
19. Chlorine analyzer at outlet is working.
20. Both transformers are working.
21. Leak absorption system is working and must always be kept in auto mode.
22. Both DGs are working.
23. In SCADA system of STP, signals from associated infrastructure are not coming hence report is not generated. Concessionaire is required to rectify this problem for better monitoring.
24. For Jhunsi MPS, following observations were made during visit:
    a) All submersible pumps are working.
    b) Mechanical screen is under maintenance.

25. For Shastri Bridge SPS, following observations were made during visit:
    a) Four submersible pumps are working, and one pump is under maintenance.
    b) Mechanical screen was working.
    c) Both transformers are OK for operation.
    d) DG set is OK for operation.

26. Since COD is announced for all Package – I 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:

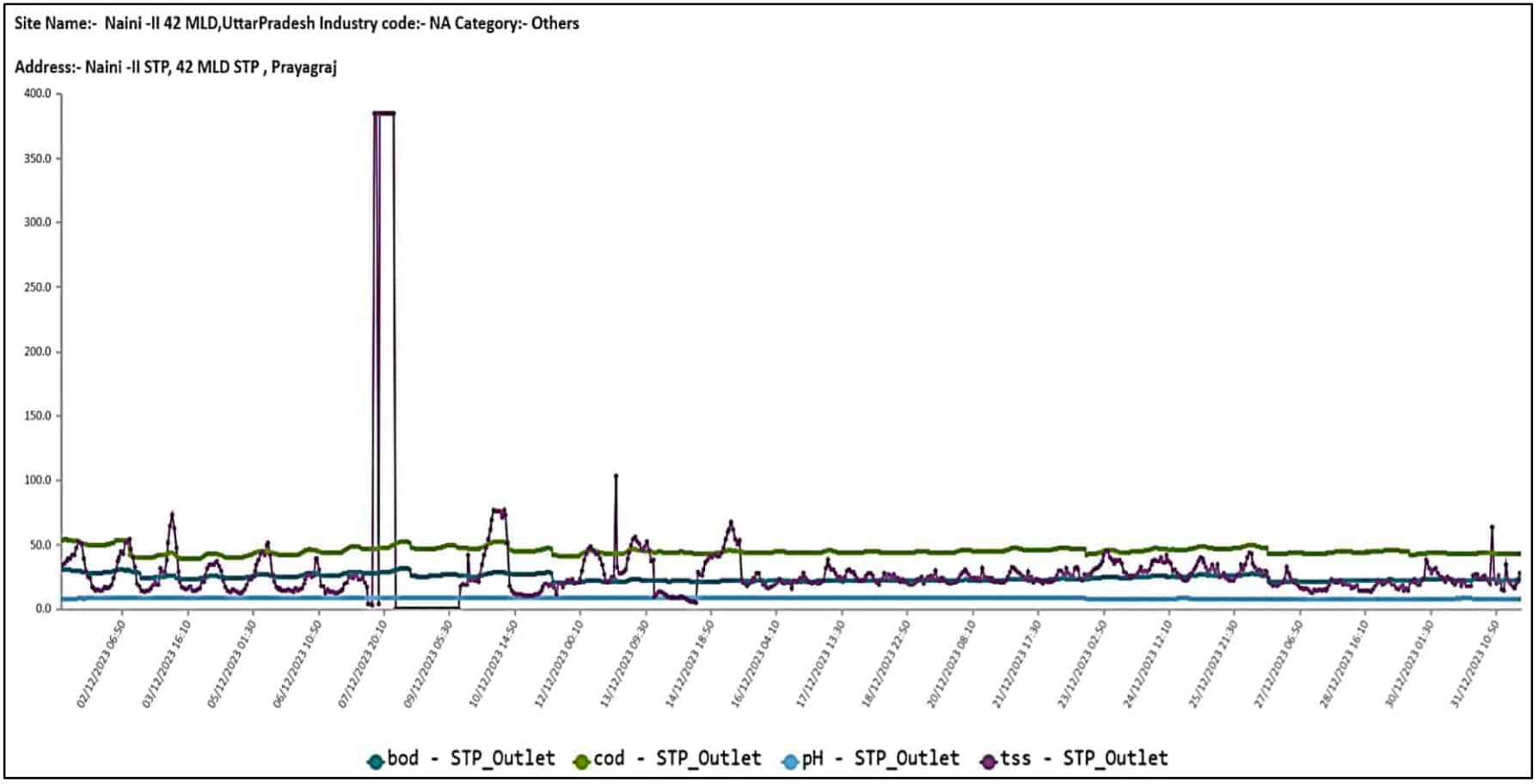
a) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
b) Testing of TN, NH4-N, TP for composite samples of influent must be performed each day as per Part-G in Schedule-10 of CA.
c) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
d) Quarterly report as per Part-G in Schedule-10 of CA.
e) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
f) Procedure for recording & disposal of complaints.
g) Safety & Health Records. Incident reports must also be submitted along with action plan.
h) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.

1.3 Recommendations

- 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 FCRs also for checking the efficiency of FCRs.
- 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 material remaining from construction works must be removed from the site.
- 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.
- Awareness trainings for workers must be given for encouraging them to use PPEs.

2. NAINI-II 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: Rectification of problem for variation in data is going on as fine tuning of multi parameter analyzer from OEM is in progress.

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

Date	Daily Feed Quantity MLD (Design-42 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-Dec-23	41200	41.20	7.75	7.94	180	27	352	49	278	28	NA	500	0.3	24.40	1100000	
2-Dec-23	37620	37.62	7.67	7.98	190	28	380	44	276	27	NA	400	0.2	24.10	1300000	
3-Dec-23	41700	41.70	7.78	7.92	185	25	386	40	268	27	NA	400	0.3	24.62	1200000	
4-Dec-23	41330	41.33	7.93	7.97	190	26	372	44	282	23	NA	500	0.3	24.23	1400000	
5-Dec-23	38500	38.50	7.94	7.98	195	25	374	44	280	25	NA	400	0.2	24.46	1300000	
6-Dec-23	38000	38.00	7.92	7.95	190	26	380	45	276	20	NA	600	0.3	24.64	1700000	
7-Dec-23	43800	43.80	7.93	7.99	195	27	392	48	280	22	NA	400	0.3	24.40	1200000	
8-Dec-23	39640	39.64	7.91	7.96	195	26	388	48	257	22	NA	500	0.2	24.31	1300000	
9 Dec 23	39690	39.69	7.90	7.97	185	25	372	44	298	25	NA	600	0.2	24.40	1700000	
10-Dec-23	38440	38.44	7.81	7.93	180	26	364	48	291	26	NA	400	0.2	25.12	1300000	
11-Dec-23	38970	38.97	7.88	7.95	175	24	344	44	287	19	NA	500	0.3	23.87	1100000	
12-Dec-23	36920	36.92	7.80	7.96	170	22	328	40	290	33	NA	700	0.2	23.89	1400000	
13-Dec-23	37440	37.44	7.81	7.94	175	23	332	44	281	29	NA	600	0.2	24.10	1200000	
14-Dec-23	38480	38.48	7.88	7.99	170	22	328	40	267	24	NA	400	0.3	23.61	1400000	
15-Dec-23	38900	38.90	7.89	7.97	165	23	320	44	276	33	NA	700	0.2	24.31	1700000	
16-Dec-23	37880	37.88	7.90	7.98	160	22	336	48	260	23	NA	500	0.3	23.41	1100000	
17-Dec-23	37680	37.68	7.94	7.99	170	23	332	44	276	26	NA	600	0.2	24.13	1300000	
18-Dec-23	38680	38.68	7.98	7.99	175	22	328	48	284	25	NA	700	0.3	23.55	1700000	
19-Dec-23	37430	37.43	7.88	7.91	170	21	340	44	289	24	NA	500	0.3	23.40	1400000	
20-Dec-23	36880	36.88	7.73	7.84	165	23	328	48	278	26	NA	400	0.2	24.21	1200000	
21-Dec-23	35690	35.69	7.70	7.93	160	24	320	44	264	25	NA	500	0.2	24.19	1100000	
22-Dec-23	38130	38.13	7.70	7.87	170	25	340	44	290	26	NA	400	0.3	23.81	1400000	
23-Dec-23	38420	38.42	7.71	7.82	185	24	352	48	301	32	NA	600	0.3	24.07	1700000	
24-Dec-23	39250	39.25	7.68	7.80	180	25	344	44	304	30	NA	500	0.2	24.51	1300000	
25-Dec-23	38110	38.11	7.70	7.85	175	24	356	48	290	28	NA	700	0.3	23.87	1700000	
26-Dec-23	38560	38.56	7.64	7.81	185	25	340	44	300	27	NA	500	0.2	23.45	1400000	
27-Dec-23	39530	39.53	7.61	7.84	175	22	316	40	296	20	NA	400	0.2	24.17	1300000	
28-Dec-23	37530	37.53	7.54	7.79	165	23	300	44	279	20	NA	500	0.3	22.75	1700000	
29-Dec-23	37700	37.70	7.52	7.78	160	22	296	48	271	22	NA	600	0.3	23.67	1400000	
30-Dec-23	36090	36.09	7.40	7.75	155	24	312	40	280	24	NA	700	0.3	24.05	1100000	
31-Dec-23	39190	39.19	7.51	7.80	160	22	304	44	267	23	NA	400	0.2	24.31	1400000	
Average	**38625.16**	**38.63**	**7.77**	**7.91**	**175.81**	**24.06**	**343.74**	**44.71**	**281.16**	**25.29**		**519.35**	**0.25**	**24.06**	**1370967.74**	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken Report

Month of Site Inspection	December 2023
Site Inspectors	10. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R), Prayagraj 11. Mr. Karunakar Singh, AE, UPJN(R), Prayagraj 12. Mr. Sudheer, APE, GPCU, UPJN(R), Prayagraj 13. Mr. Jitender Yadav, JE, UPJN(R), Prayagraj 14. Mr. Gaurav Gupta, AECOM 15. Mr. Sudhir Tomar, AECOM 16. Mr. Teekam Singh, PWPL 17. Mr. Rahul Kumar Azaad, PWPL 18. Mr. Rahul Chaudhary, PWPL
Place(s) of Inspection	• 42 MLD STP at Naini-II, Prayagraj • 43.54 MLD MPS at Naini-II, Prayagraj • 35.85 MLD SPS at Mawaiya, Prayagraj • 2.15 MLD SPS at Mahewaghat, Prayagraj

Visit was done on 29th November 2023, 9th December 2023, 11th December 2023, 12th December 2023 & 26th December 2023 and following observations were made after action taken by Concessionaire on inspection report provided by Project Engineer for November-23:

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Naini-II STP	36.92 to 43.80
2	Naini-II MPS	36.92 to 43.80
3	Mawaiya SPS	32.10 to 38.36
4	Mahewagaht SPS	0.67 to 1.20

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	22 to 28 mg/l
2	TSS – Effluent	< 50 mg/l	19 to 33 mg/l
3	pH – Effluent	6.5 – 9.0	7.92 to 7.99
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.41 to 25.12 %
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	Naini II Facility	4529 to 5868

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

- Status of tasks related to Construction phase:

  - Civil Works:

Sr. No.	Work description	Status
1.	At Naini-II STP, rectification for problem of water logging in area between FCR and Tube settler tank is in progress.	Completed but permanent solution for the same must be provided i.e., land filling in the area must be done as suggested.
2.	At Naini-II STP, rectification of effluent pipeline near outfall area as per site condition.	Work is pending. Currently, temporary arrangement is provided by means of boulder pitching and concrete. However, this work was completed once but pipes broke down in the month of June-23 due to soil erosion.

  - E&M Works:

Sr. No.	Work description	Status
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.	As informed by Concessionaire, order of desired gates is placed, and purchase order is released. Gates will be received at site by the end of Dec-23 as per PO. However, this work is not part of scope of works given in Schedule-1 of Concession Agreement but must be done as per site requirement at no extra cost to UPJN.
2.	At Naini-II STP, rectifications 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.	Latest reports are checked and found that they are almost stabilized apart from minor variations. Also, run hour report from for equipment in SCADA system is not complete. Therefore, Concessionaire is suggested to keep doing fine tuning of SCADA system during O&M phase also and do the changes as per observations given for getting better performance as per CPCB norms and Concession Agreement.
3.	At Naini-II STP, installation of asset management system is pending.	Asset Management System is almost ready hence Concessionaire is required to use the same in daily maintenance activities. Reports generated from Asset Management System must be filed regularly and submitted along with Monthly Progress Reports which is not started yet. Also, changes must be made as per observations given for better performance.

- Status of various units & records at site related to O&M phase:

1. Latest SCADA reports regarding KPIs for Naini-II STP were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
2. Latest SCADA reports regarding KPIs for Naini-II STP were checked to evaluate the performance of multiparameter analyzer at inlet and it was found that the said SCADA reports are almost

stabilized apart from some minor variations.

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 for TSS, sudden spikes/drops can be seen in the graphs while for pH, BOD, COD, the graphs are showing same values for complete month which is fundamentally not correct.
4. Flowmeter at inlet of STP is working.
5. Flowmeter at outlet of STP is working. There is variation in between inlet and outlet flow which is more than water loss shown for the STP. Concessionaire is required to resolve this problem.
6. Online analyzer at inlet of STP is working except TSS sensor.
7. Online analyzer at outlet of STP is working.
8. All Grit Removal Units are working.
9. Both Mechanical Screens are working. Currently screens are running in auto mode through timer.
10. 5 out of 6 FCR tanks are working, and one is in maintenance for rectifying problem in diffusers. Shade on top of FCRs is not installed yet for better maintenance of plants during summer season.
11. Minor Seepages from FCR & some other units can be seen, this must be rectified.
12. There is water logging in area between FCR and Tube settler tank for which a temporary submersible pump is installed for dewatering purpose however Concessionaires is required to provide permanent solution for the same.
13. DO analyzers for all FCR units are working.
14. All aeration blowers are working.
15. All tube settler units are working. Rectification of problem related to operating drain vales must be completed at the earliest. Also, problem of filling of water in pits for drain valves must be rectified for ease in operation and maintenance of drain valves.
16. Quality of effluent is Good.
17. 6 out of 9 volute presses in dewatering unit were in operation and 3 volute presses are under maintenance. Poly preparation unit was in operation.
18. All dewatering feed pumps are under maintenance. Currently, submersible pump is being used for transferring sludge from digesters to dewatering building. Concessionaire is required to provide permanent solution for the same.
19. Both chlorinators are working. Both booster pumps are working.
20. Chlorine analyzer at outlet is working but not showing correct values.
21. Installation of Safety shower and eyewash near chlorination unit is pending.
22. One out of two transformers is in maintenance hence there is currently no standby for the STP.
23. Leak absorption system is working. It must always be kept in auto mode.
24. Both DGs are working.
25. In SCADA system of STP, signals from associated infrastructure are not coming properly hence report is not generated accurately. Concessionaire is required to rectify this problem for better monitoring.
26. In all I&Ds, cleaning of garbage must be done regularly.
27. For Naini-II MPS, following observations were made during visit:
    a) All submersible pumps are working.
    b) Both mechanical screens are working. Currently screens are running in auto mode through timer.

28. For Mawaiya SPS, following observations were made during visit:

    a) All submersible pumps are working.
    b) Both mechanical screens are working. Currently screens are running in auto mode through timer.
    c) One out of two transformers is in maintenance hence there is currently no standby for the SPS.
    d) DG sets are OK for operation.

29. For Mahewaghat SPS, following observations were made during visit:

    a) Two out of three submersible pumps are working, one pump is in maintenance.
    b) Mechanical screens are working. Currently screens are running in auto mode through timer.
    c) Both transformers are OK for operation.
    d) DG set is OK for operation.

30. Since COD is announced for all Package – I 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:

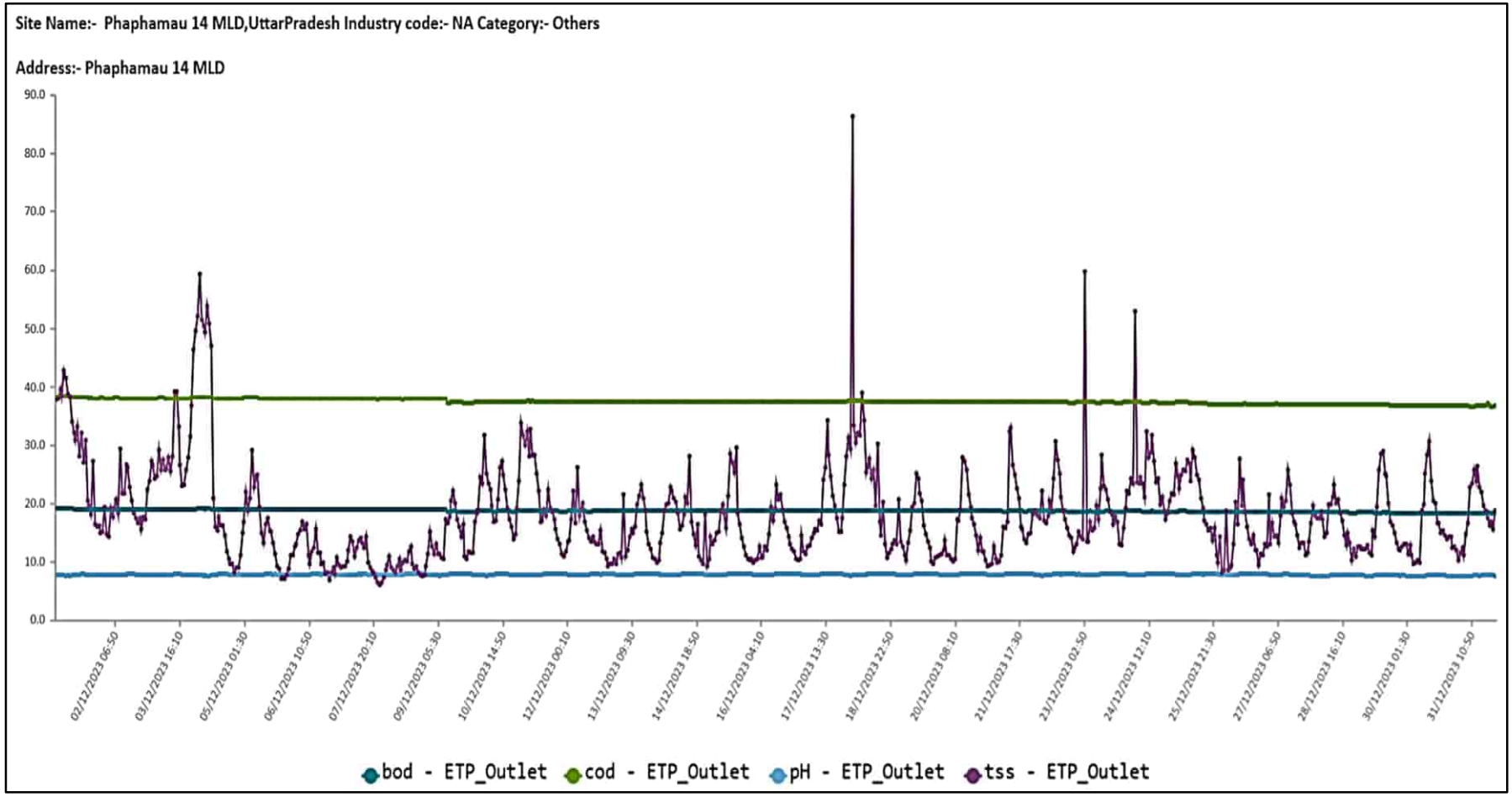
    a) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
    b) Testing of TN, NH4-N, TP for composite samples of influent must be performed each day as per Part-G in Schedule-10 of CA.
    c) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
    d) Quarterly report as per Part-G in Schedule-10 of CA.
    e) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
    f) Procedure for recording & disposal of complaints.
    g) Safety & Health Records. Incident reports must also be submitted along with action plan.
    h) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.

2.3 Recommendations

- 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 FCRs also for checking the efficiency of FCRs.
- 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 material remaining from construction works must be removed from the site.
- 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.
- Awareness trainings for workers must be given for encouraging them to use PPEs.

3. PHAPHAMAU 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: Rectification of problem for variation in data is going on as fine tuning of multi parameter analyzer from OEM is in progress.

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

Date	Daily Feed Quantity MLD (Design-14 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-Dec-23	14670	14.67	7.23	7.87	155	19	300	40	250	27	NA	500	0.2	23.03	1400000	
2-Dec-23	14580	14.58	7.16	7.89	160	20	304	36	220	20	NA	400	0.3	24.53	1300000	
3-Dec-23	15670	15.67	7.19	7.89	165	19	308	40	250	28	NA	600	0.3	24.29	1700000	
4-Dec-23	14000	14.00	7.23	7.87	160	20	316	36	242	27	NA	400	0.2	23.90	1300000	
5-Dec-23	16080	16.08	7.30	7.91	155	19	304	40	210	16	NA	600	0.3	24.29	1400000	
6-Dec-23	14700	14.70	7.49	7.90	160	20	296	36	220	12	NA	500	0.2	22.82	1700000	
7-Dec-23	15000	15.00	7.50	7.90	155	19	312	36	235	11	NA	400	0.2	24.53	1300000	
8-Dec-23	16410	16.41	7.38	7.93	155	20	296	40	245	10	NA	500	0.3	23.85	1400000	
9-Dec-23	15160	15.16	7.38	7.91	155	18	292	36	230	14	NA	600	0.2	23.98	1700000	
10-Dec-23	16170	16.17	7.55	7.90	155	19	304	40	229	20	NA	500	0.2	23.50	1400000	
11-Dec-23	14100	14.10	7.55	7.92	155	18	300	36	218	22	NA	400	0.3	23.58	1300000	
12-Dec-23	14360	14.36	7.50	7.94	160	19	296	36	225	15	NA	600	0.2	23.10	1700000	
13-Dec-23	15570	15.57	7.56	7.96	160	18	304	40	255	15	NA	500	0.2	24.07	1400000	
14-Dec-23	14690	14.69	7.65	7.85	165	19	288	36	285	18	NA	400	0.3	22.89	1300000	
15-Dec-23	15500	15.50	7.64	7.94	160	18	304	40	260	17	NA	600	0.2	23.25	1700000	
16-Dec-23	15900	15.90	7.57	7.95	155	18	292	36	245	15	NA	400	0.3	23.62	1400000	
17-Dec-23	16430	16.43	7.52	7.94	155	17	288	40	240	18	NA	400	0.2	22.93	1700000	
18-Dec-23	15500	15.50	7.48	7.93	150	18	284	36	242	24	NA	500	0.3	23.72	1300000	
19-Dec-23	15740	15.74	7.54	7.93	155	17	252	28	202	17	NA	600	0.2	22.00	1700000	
20-Dec-23	16100	16.10	7.46	7.95	160	18	280	36	250	15	NA	500	0.2	23.30	1400000	
21-Dec-23	15050	15.05	7.48	7.96	165	17	300	40	248	16	NA	600	0.3	22.25	1700000	
22-Dec-23	15010	15.01	7.45	7.96	160	18	296	36	235	18	NA	500	0.2	23.79	1400000	
23-Dec-23	14360	14.36	7.43	7.95	165	19	304	36	270	17	NA	600	0.3	22.57	1300000	
24-Dec-23	16320	16.32	7.43	7.98	160	18	312	40	275	23	NA	400	0.2	23.29	1700000	
25-Dec-23	15330	15.33	7.45	7.95	155	17	288	36	272	24	NA	500	0.3	22.49	1300000	
26-Dec-23	15200	15.20	7.40	7.97	160	18	292	36	260	15	NA	600	0.2	23.65	1400000	
27-Dec-23	15710	15.71	7.38	7.87	155	18	304	40	279	16	NA	400	0.3	24.17	1300000	
28-Dec-23	15110	15.11	7.45	7.79	160	19	316	36	276	17	NA	600	0.2	23.92	1700000	
29-Dec-23	19320	19.32	7.38	7.77	150	18	292	36	279	16	NA	400	0.3	22.66	1300000	
30-Dec-23	20600	20.60	7.37	7.75	155	19	276	40	280	17	NA	600	0.2	24.20	1700000	
31-Dec-23	18160	18.16	7.34	7.74	150	18	280	36	290	17	NA	400	0.3	23.19	1300000	
Average	**15693.55**	**15.69**	**7.43**	**7.90**	**157.58**	**18.45**	**296.13**	**37.29**	**248.94**	**17.97**		**500.00**	**0.25**	**23.46**	**1470967.74**	

Source: Logbook of Laboratory at Sewage Treatment Plant.

3.2 Action taken Report.

Month of Site Inspection	December 2023
Site Inspectors	1. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R), Prayagraj 2. Mr. Karunakar Singh, AE, UPJN(R), Prayagraj 3. Mr. Nirender, APE, GPCU, UPJN(R), Prayagraj 4. Mr. Jitender Yadav, JE, UPJN(R), Prayagraj 5. Mr. Gaurav Gupta, AECOM 6. Mr. Sudhir Tomar, AECOM 7. Mr. Teekam Singh, PWPL 8. Mr. Rahul Kumar Azaad, PWPL 9. Mr. Rahul Chaudhary, PWPL
Place(s) of Inspection	• 14 MLD STP at Phaphamau, Prayagraj • 14 MLD MPS at Phaphamu, Prayagraj • 5.53 MLD SPS at Basna Nalla, Prayagraj

Visit was done on 1st December2023, 13th December2023, 19th December2023, & 28th December2023 and following observations were made after action taken by Concessionaire Concessionaire on inspection report provided by Project Engineer for November-23:

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped/Received at Facility (MLD)
1	Phaphamu STP	14.00 to 16.43
2	Shantipuram MPS	14.00 to 16.43
3	Basna nalla SPS	3.63 to 4.77

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	18 to 20 mg/l
2	TSS – Effluent	< 50 mg/l	10 to 28 mg/l
3	pH – Effluent	6.5 – 9.0	7.85 to 7.96
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 600 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.82 to 24.53 %
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1300000 to 1700000 MPN/gTS

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

- Status of Energy Consumption:

S. No.	Facility Name	Actual Energy Consumption (KWH/MLD)
1	Phaphamu Facility	2897 to 3278

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

- Status of tasks related to Construction phase:

A) Civil Works:

Sr. No.	Work description	Status
1.	At Basna Nalla SPS, epoxy coating in wet well is pending.	Completed.
2.	At Basna Nalla SPS, it is required to provide strength to temporary bund required for diverting sewage to tapping point. Breakage of this bund is very frequent due to which raw water goes to the river without any treatment.	Work for strengthening of retaining wall is pending and will be completed in dry weather season as per information given by Concessionaire. It must be done to ensure 100% availability of Basna Nalla SPS.
3.	At Phaphamau STP, landscaping and development work for complete site is pending.	Completed apart from material stacked at the gate which must be shifted to appropriate place.

B) E&M Works:

Sr. No.	Work description	Status
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.	As informed by Concessionaire, order of desired gates is placed, and purchase order is released. Gates will be received at site by the end of Dec-23 as per PO. However, this work is not part of scope of works given in Schedule-1 of Concession Agreement but must be done as per site requirement at no extra cost to UPJN.
2.	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.	Work is pending. However, Concessionaire vide letter no. PWPL/UPJN/PRAYAGRAJ/SITE/929 dated 28th Oct 2023, have agreed to install solar power plant of remaining capacity i.e., 33 KW.
3.	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.	Latest reports of Nov-23 are checked and found that they are almost stabilized apart from minor variations. Also, run hour report from for equipment in SCADA system is not complete. Therefore, Concessionaire is suggested to keep doing fine tuning of SCADA system during O&M phase also and do the changes as per observations given for getting better performance as per CPCB norms and Concession Agreement.
4.	At Phaphamau STP, installation of asset management system is not started yet.	Asset Management System is almost ready hence Concessionaire is required to use the same in daily maintenance activities. Reports generated from Asset Management System must be filed regularly and submitted along with Monthly Progress Reports. Also, changes must be made as per observations given for better performance.

- Status of various units & records at site related to O&M phase:

1. Latest SCADA reports regarding KPIs for Phaphamau STP were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
2. Latest SCADA reports regarding KPIs for Phaphamau STP were checked to evaluate the performance of multiparameter analyzer at inlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
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 for TSS, sudden spikes/drops can be seen in the graphs while for pH, BOD, COD, the graphs are showing same values for complete month which is fundamentally not correct.
4. Flowmeter at inlet of STP is working.
5. Flowmeter at outlet of STP is working. There is variation in between inlet and outlet flow which is more than water loss shown for the STP. Concessionaire is required to resolve this problem.
6. Online analyzer at inlet of STP is working.
7. Online analyzer at outlet of STP is working.
8. All Grit Removal Units are working. Bridge for one Grit Removal unit is rubbing the RCC column, due to which it is not moving properly. Concessionaires is required to provide permanent solution for the same.
9. There are some leakages in chamber of screw conveyor and organic return pump for Grit Removal Units. Concessionaires is required to rectify the same.
10. Both Mechanical Screens are working. Currently screens are running in auto mode through timer.
11. All FCR units are working. Shade on top of FCRs is not installed yet for better maintenance of plants during summer season.
12. There is water logging in area between FCR and Tube settler tank for which a temporary submersible pump is installed for dewatering purpose however Concessionaires is required to provide permanent solution for the same.
13. DO analyzers for all FCR unit are working.
14. All aeration blowers are working.
15. All tube settler units are working. Rectification of problem related to operating drain vales must be completed at the earliest. Also, problem of filling of water in pits for drain valves must be rectified for ease in operation and maintenance of drain valves.
16. Quality of effluent is Good.
17. Sludge dewatering unit was in operation. Poly preparation unit was in operation.
18. Both dewatering feed pumps are working.
19. Both chlorinators are working. Both booster pumps are working.
20. Chlorine analyzer at outlet is working but not showing correct values.
21. Both transformers are working.
22. Leak absorption system is working and must always be kept in auto mode.
23. Both DGs are working.
24. In SCADA system of STP, signals from associated infrastructure are not coming properly hence report is not generated accurately. Concessionaire is required to rectify this problem for better monitoring.
25. For Shantipuram MPS, following observations were made during visit:
    a) All submersible pumps are working.
    b) Mechanical screen is working. Currently screens are running in auto mode through timer.
    c) Provide proper cover for discharge chute of screw conveyor for mechanical screen.
    d) Housekeeping must be improved.
26. For Basna Nalla SPS, following observations were made during visit:
    a) All submersible pumps are working.
    b) Mechanical screen is working. Currently screens are running in auto mode through timer.
    c) Both transformers are OK for operation.

d) DG set is OK for operation.

27. Since COD is announced for all Package – I 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) Calibration certificates of all the instruments must be submitted as per clause no. 9.8(a)(viii) of Concession Agreement.
    b) 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.
    c) Site Diary as per Clause no. 1.7.2 of Part-G in Schedule – 10 of Concession Agreement.
    d) Quarterly report as per Part-G in Schedule-10 of CA.
    e) Monthly Environmental Monitoring Report as per Part-G in Schedule-10 of CA.
    f) Procedure for recording & disposal of complaints.
    g) Safety & Health Records. Incident reports must also be submitted along with action plan.
    h) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
    i) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

3.3 Recommendations

- 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 FCRs also for checking the efficiency of FCRs.
- 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 material remaining from construction works must be removed from the site.
- 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.
- Awareness trainings for workers must be given for encouraging them to use PPEs.

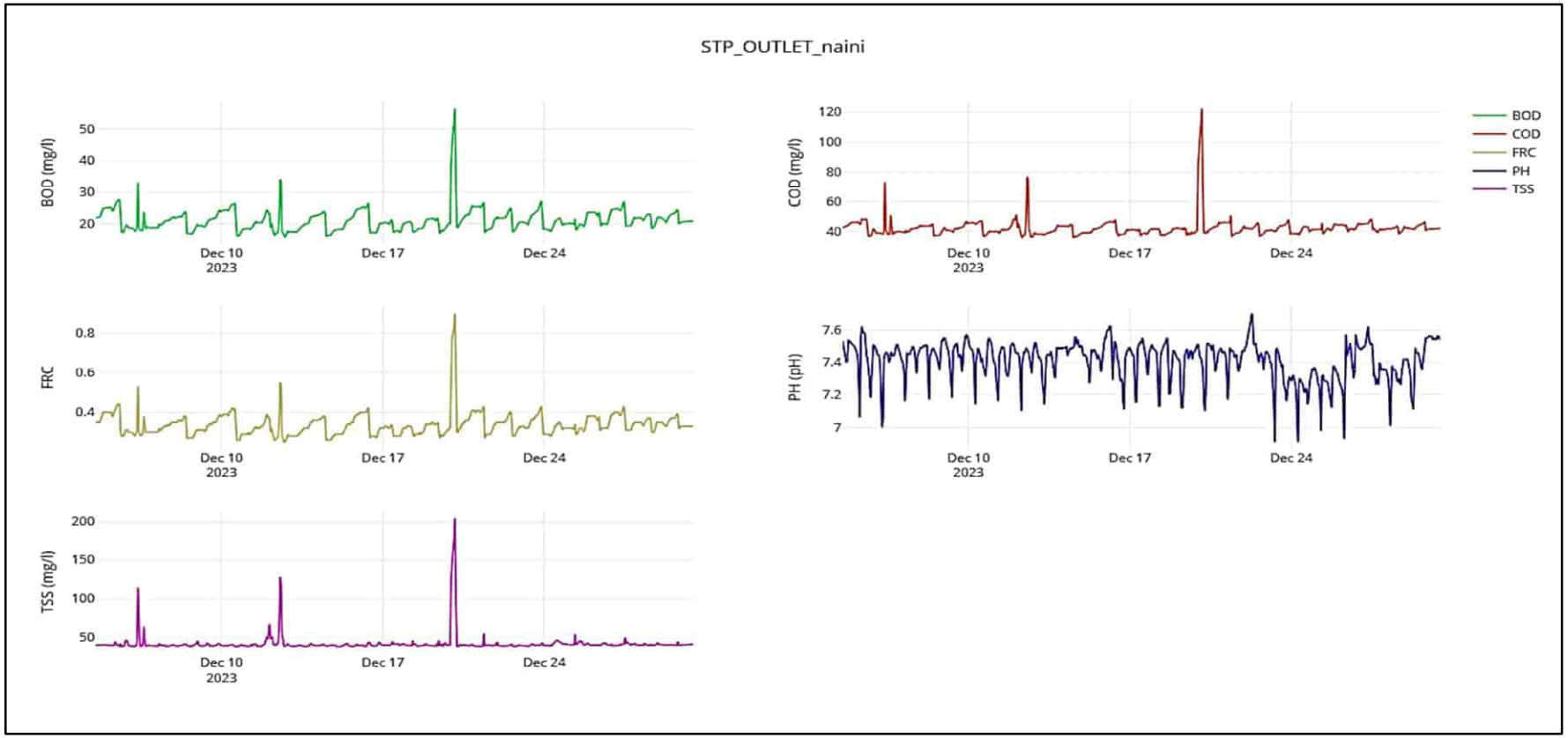
ANNEXURE-II

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 fine tuning of multi parameter analyzer from OEM is in progress.
2. FRC sensor calibration is completed but it is under observation.

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

Date	Daily Feed Quantity MLD (Design-80 MLD)		pH		BOD (mg/l)		COD (mg/l)		TSS (mg/l)		FECAL COLIFORM		FRC	DEWATERED SLUDGE		REMARKS
	M3	MLD	Inlet pH (Design-<9)	Final pH (Design-6.5 to 9.0)	Inlet BOD (Design-<250 mg/l)	Final BOD (Design -<30 mg/l)	Inlet COD (Design-<500 mg/l)	Final COD (Design -<50 mg/l)	Inlet TSS (Design-<500 mg/l)	FinalTSS (Design -<50 mg/l)	Inlet (Design - NA)	Final (Design - <1000 MPN/100 ml)	Final (Design - 0.2 mg/l)	Outlet Concentration (>20%)	Fecal Coliform (20,00,000 MPN/gTS)	
01-Dec-23	101620	101.62	7.05	7.49	135	20	308	45	285	44	NA	700	0.2	23.46	1100000	
02-Dec-23	101290	101.29	7.03	7.54	140	20	286	44	282	39	NA	600	0.2	24.35	1700000	
03-Dec-23	103890	103.89	7.08	7.46	125	18	288	40	268	38	NA	600	0.3	24.49	1700000	
04-Dec-23	107890	107.89	7.03	7.52	130	21	292	40	265	38	NA	700	0.3	23.46	1200000	
05-Dec-23	105650	105.65	7.39	7.45	135	24	305	44	266	39	NA	500	0.2	24.22	1100000	
06-Dec-23	102950	102.95	7.52	7.58	140	18	294	41	253	40	NA	500	0.3	24.54	1200000	
07-Dec-23	113670	113.67	7.38	7.45	130	22	304	40	264	38	NA	400	0.2	24.50	1400000	
08-Dec-23	113020	113.02	7.52	7.59	135	20	292	44	277	39	NA	600	0.3	24.49	1100000	
09-Dec-23	110720	110.72	7.50	7.52	125	21	304	40	280	40	NA	500	0.3	23.90	1700000	
10-Dec-23	109190	109.19	7.36	7.47	140	23	296	44	265	39	NA	600	0.2	24.32	1100000	
11-Dec-23	110650	110.65	7.35	7.46	130	21	308	40	273	42	NA	700	0.2	24.12	1400000	
12-Dec-23	110060	110.06	7.28	7.52	135	20	312	40	276	45	NA	400	0.3	20.39	1200000	
13-Dec-23	102780	102.78	7.26	7.38	125	19	316	40	292	40	NA	600	0.2	22.74	1700000	
14-Dec-23	104100	104.10	7.31	7.47	130	20	304	44	268	38	NA	500	0.3	23.31	1100000	
15-Dec-23	107690	107.69	7.35	7.44	125	21	312	44	275	41	NA	400	0.2	23.76	1400000	
16-Dec-23	107420	107.42	7.42	7.45	130	23	308	40	270	40	NA	600	0.3	22.86	1200000	
17-Dec-23	108680	108.68	7.43	7.52	125	20	296	44	276	37	NA	500	0.2	23.11	1700000	
18-Dec-23	108160	108.16	7.5	7.42	130	19	300	40	271	40	NA	700	0.3	23.41	1300000	
19-Dec-23	111090	111.09	7.43	7.48	135	21	296	44	282	44	NA	500	0.3	22.86	1400000	
20-Dec-23	110060	110.06	7.19	7.41	120	28	292	40	264	39	NA	400	0.2	24.9	1200000	
21-Dec-23	110070	110.07	7.15	7.38	125	22	304	44	270	38	NA	600	0.3	24.3	1700000	
22-Dec-23	108460	108.46	7.13	7.44	130	20	308	40	277	40	NA	400	0.2	23.47	1100000	
23-Dec-23	113380	113.38	7.16	7.4	135	23	300	44	281	41	NA	700	0.3	23.8	1300000	
24-Dec-23	111660	111.66	7.19	7.28	125	20	292	40	267	42	NA	800	0.2	23.67	1700000	
25-Dec-23	108580	108.58	7.09	7.25	130	21	316	44	275	40	NA	500	0.2	23.6	1200000	
26-Dec-23	104170	104.17	7.06	7.33	135	22	304	40	273	38	NA	600	0.3	24.1	1400000	
27-Dec-23	100060	100.06	7.07	7.36	140	23	312	44	266	41	NA	400	0.2	23.18	1300000	
28-Dec-23	100920	100.92	7.02	7.28	125	22	292	40	272	38	NA	500	0.3	24.01	1100000	
29-Dec-23	98130	98.13	7.04	7.33	140	20	324	36	270	40	NA	700	0.2	23.86	1700000	
30-Dec-23	0	0	-	-	-	-	-	-	-	-	NA	-	-	23.85	1400000	Plant was shutdown for Rectification work in Outlet flow Meter line at 30/12/2023, 12.05 AM
31-Dec-23	0	0	-	-	-	-	-	-	-	-	NA	-	-	23.93	1200000	
Average	**100193.87**	**100.19**	**7.25**	**7.44**	**131.21**	**21.10**	**302.24**	**41.72**	**272.52**	**39.93**		**558.62**	**0.25**	**23.71**	**1354838.71**	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken report

Month of Site Inspection	December 2023
Site Inspectors	1. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R). 2. Mr. Karunakar Singh AE, UPJN(R). 3. Mr. Satwant, JE, UPJN(R). 4. Mr. Jitender, JE, UPJN(R). 5. Mr. Gaurav Gupta, AECOM. 6. Mr. Sudhir Kumar Tomar, AECOM. 7. Mr. Rahul Azaad, PWPL. 8. Mr. Deepak, 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 28th November 2023, 5th December 2023, 14th December 2023, & 22nd December 2023 and following observations were made after action taken by Concessionaire on inspection report provided by Project Engineer for November-23:

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Naini-I STP	101.29 to 113.67
2	Gaughat MPS	100.88 to 113.86
3	Chacharnalla SPS	31.78 to 41.13

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	18 to 24 mg/l
2	TSS – Effluent	< 50 mg/l	35 to 45 mg/l
3	pH – Effluent	6.5 – 9.0	7.38 to 7.59
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	20.39 to 24.54 %
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)
1	Naini I Facility	13985 to 16105

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

- Status of various units & records at site:

1. Latest SCADA reports regarding KPIs for Naini-I STP were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.

2. Latest SCADA reports regarding KPIs for Naini-I STP were checked to evaluate the performance of multiparameter analyzer at inlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. For associated infrastructure of Naini-I STP, reports are being generated for both Chacharnalla SPS and Gaughat MPS.

   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 for Chacharnalla SPS.

   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 for both Chacharnalla SPS and Gaughat MPS, 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. Modification work regarding rectification of the problem is in progress. Concessionaire to required to expedite the same.
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. Concessionaire is required to the needful for running biogas engine even without power from grid.
9. Gas engine is working. Currently, Biogas engine is operated for 16 hours from 3 PM to 7 AM as per availability of Biogas and for remaining time i.e., 7 AM to 3 PM, the STP is being operated on Solar energy as per availability.
10. All three mechanical screens of 60 MLD part are working. Currently screens are running in auto mode through timer however differential level sensors are not working.
11. All two mechanical screens of 20 MLD part are working. Cleaning brush is not working properly replacement of brush is required. Currently screens are running in auto mode through timer however differential level sensors are not working.
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. Telescopic valves of Primary Settling Tanks are not working.
16. 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.
17. 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.
18. Aeration tank of 20 MLD is in operation. DO analyzer is working.
19. All Aeration blowers are working.
20. All Final Settling Tanks are working.
21. It is suggested to install torque switches in all clarifiers for having better protection against excessive load on scrapper.

22. 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.
23. In RSPH unit of 60 MLD, all pumps are working.
24. In RSPH unit of 20 MLD, all pumps are working.
25. Both chlorinators are in working condition. Both booster pumps are working.
26. Leak absorption system is working. Checking of concentration for caustic solution filled in leak absorption system must be done every month.
27. Storge of Empty and filled chlorine tonners are not done properly as per safety norms. Concessionaires is required to do the needful for the same.
28. Since the chlorine tonner storage in Naini-1 STP goes beyond 4 tonners at one time hence concessionaires is required to obtain license regarding chlorine storage as per gas cylinder Rules (2016).
29. Installation of new chlorine analyzer at outlet is completed. It is under observation.
30. Both thickeners are in working condition. Installation of actuators for drain valves is pending.
31. All thickened sludge transfer pumps are working.
32. In TEPH, all pumps are OK for operation for Dandi and Naini Area.
33. For TEPH panel, modification of room is completed but panel erection is not started yet as per the electrical norms.
34. Both DGs are OK for operation.
35. Sludge dewatering unit was in operation. Poly preparation unit was in operation.
36. All filtrate pumps are working.
37. Both Dewatering feed pumps are in operation.
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 and smaller size of gravel is required to be filled in SDBs. All these problems need to be rectified so that SDB can operate for more 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. 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.
46. 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.
47. Rehabilitation works for tube well unit are pending.
48. As per Clause No.1.6 & 1.7.1 of Part – G in concession agreement, new Computer Maintenance Management system (CMMS) is installed which is under observation. Concessionaire is required to submit reports generated from the same for verification from UPJN/PE and after verification, same data must be provided in MPR as supporting documents for maintenance activities.
49. CCTV camera at the outlet point of STP is not working.
50. 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.

51. It is found that testing of earthing pits is not done regularly for complete site. Concessionaire is required to perform testing of earthing pits internally at least once in a quarter and externally at least once in a year. This activity must be done on priority basis considering the mishappening of STP in Uttarakhand.
52. 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) 2 out of 3 submersible pumps are in working condition.
    d) Both mechanical screens of HNC pumps are working. Currently screens are running in auto mode through timer however differential level sensors are not working.
    e) Both mechanical screens for submersible pumps are under maintenance.
    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. New mechanical screen is available at site.

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

    a) Currently all VNC pumps are working.
    b) Both mechanical screens are working.
    c) Both DG sets are OK for operation.
    d) Old DG set is OK for operation.
    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 low and must be maintained around 0.99, rectification of this problem is required.
    h) Flowmeter in header line big VNC pumps is showing major fluctuations in flow values hence the flow recorded by it cannot be deemed as accurate.
    i) Housekeeping near VNC pumps must be improved as sludge, sewage is deposited around them which in turn will provide favorable breeding environment for mosquitos.
    j) Installation of supports in header lines for both big and small VNC pumps is required for minimizing the vibration which in turn is affecting other equipment fitted in the header line.

54. 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 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.

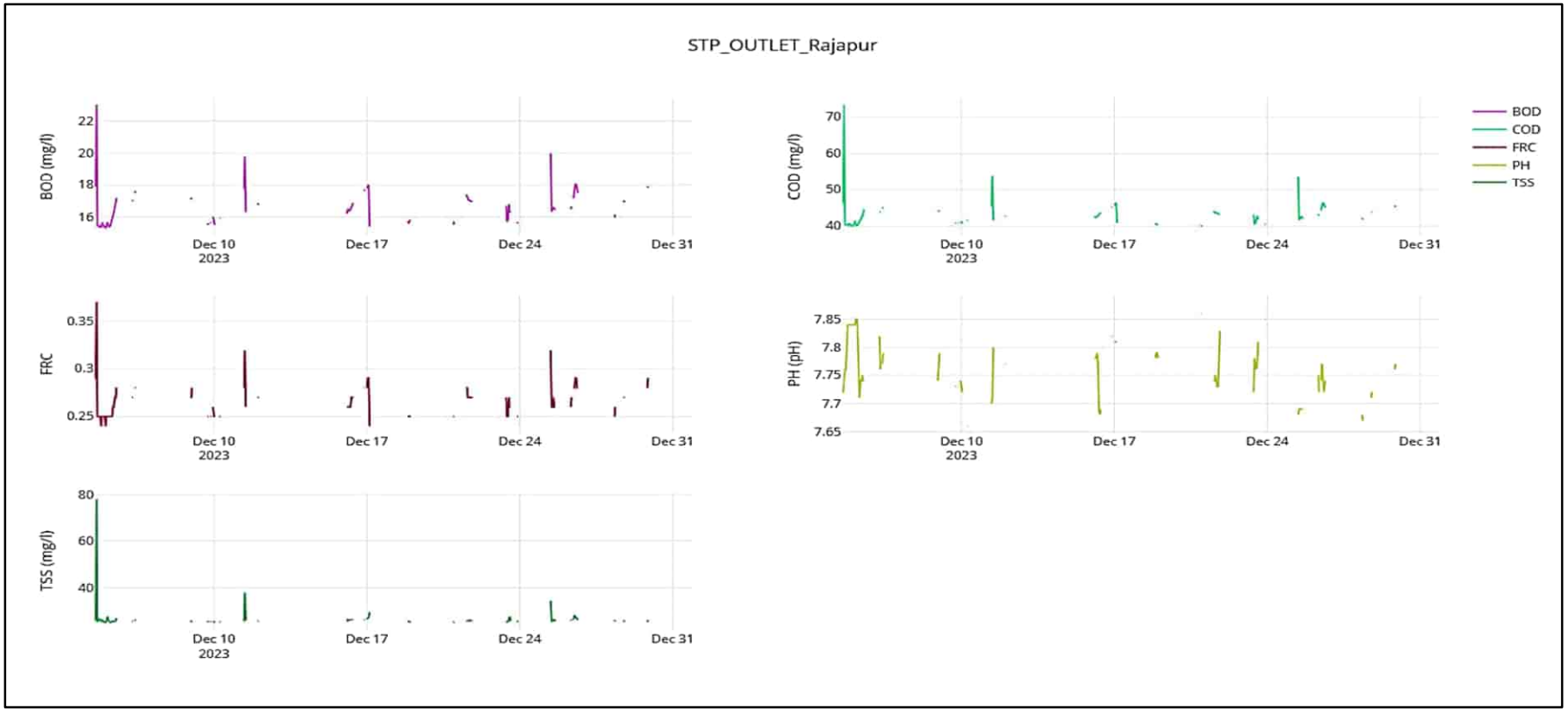
g) Procedure for recording & disposal of complaints.
h) Safety & Health Records. Incident reports must also be submitted along with action plan.
i) Periodic reports from all facilities must be uploaded on Central Pollution Control Board's Website.
j) Scheduled Maintenance Program specifying the impact of Scheduled Maintenance Periods on the Availability of each facility.

1.3 Recommendations

- 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 fine tuning of multi parameter analyzer from OEM is in progress.
2. FRC sensor calibration is completed but it is under observation.

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)	
01-Dec-23	81150	81.15	7.2	7.73	130	18	288	40	261	23	NA	500	0.3	23.91	1200000	
02-Dec-23	77620	77.62	7.27	7.76	125	16	276	44	257	24	NA	600	0.3	24.73	1400000	
03-Dec-23	79150	79.15	7.21	7.78	135	17	288	40	263	26	NA	700	0.2	24.21	1700000	
04-Dec-23	77780	77.78	7.18	7.75	120	16	284	44	259	25	NA	400	0.3	23.52	1300000	
05-Dec-23	78230	78.23	7.25	7.79	130	17	292	40	265	24	NA	500	0.3	23.74	1400000	
06-Dec-23	76380	76.38	7.23	7.81	115	16	296	48	268	26	NA	600	0.2	24.04	1700000	
07-Dec-23	78730	78.73	7.21	7.78	135	17	284	44	261	25	NA	500	0.3	23.94	1400000	
08-Dec-23	77920	77.92	7.25	7.75	130	18	284	40	270	27	NA	700	0.3	24.53	1400000	
09-Dec-23	78940	78.94	7.26	7.76	125	16	276	44	262	26	NA	400	0.3	23.47	1300000	
10-Dec-23	77320	77.32	7.24	7.73	130	17	288	40	257	27	NA	600	0.2	24.94	1700000	
11-Dec-23	75520	75.52	7.27	7.74	135	18	292	48	253	28	NA	500	0.3	23.89	1400000	
12-Dec-23	77850	77.85	7.25	7.76	130	17	284	44	259	26	NA	600	0.3	23.65	1300000	
13-Dec-23	76520	76.52	7.26	7.78	125	16	280	44	263	25	NA	400	0.2	23.8	1200000	
14-Dec-23	76890	76.89	7.29	7.76	130	18	288	48	265	27	NA	500	0.3	24.28	1400000	
15-Dec-23	75820	75.82	7.24	7.78	125	17	284	40	267	25	NA	600	0.2	24.17	1700000	
16-Dec-23	79150	79.15	7.25	7.76	135	18	296	44	259	27	NA	400	0.3	24.43	1300000	
17-Dec-23	75910	75.91	7.27	7.78	130	17	292	40	268	26	NA	500	0.3	23.39	1200000	
18-Dec-23	76420	76.42	7.31	7.77	125	16	288	44	263	25	NA	600	0.3	24.67	1400000	
19-Dec-23	75230	75.23	7.32	7.79	135	17	300	40	266	26	NA	700	0.2	24.05	1700000	
20-Dec-23	72280	72.28	7.3	7.83	120	15	284	40	259	24	NA	500	0.3	23.38	1400000	
21-Dec-23	76630	76.63	7.31	7.76	125	17	292	44	262	26	NA	400	0.3	24.48	1300000	
22-Dec-23	73830	73.83	7.38	7.69	120	16	238	40	278	27	NA	600	0.2	23.43	1700000	
23-Dec-23	71620	71.62	7.29	7.8	135	17	284	44	265	26	NA	400	0.3	24.67	1400000	
24-Dec-23	76190	76.19	7.31	7.76	130	18	292	40	271	27	NA	500	0.3	23.71	1200000	
25-Dec-23	73660	73.66	7.34	7.69	125	18	288	44	268	26	NA	700	0.2	22.5	1700000	
26-Dec-23	76430	76.43	7.32	7.73	135	17	284	44	258	25	NA	600	0.3	24.03	1400000	
27-Dec-23	75740	75.74	7.3	7.74	130	18	288	48	263	27	NA	500	0.3	23.78	1300000	
28-Dec-23	73890	73.89	7.29	7.72	125	17	276	44	256	24	NA	600	0.2	23.52	1700000	
29-Dec-23	77210	77.21	7.32	7.75	135	18	284	44	263	27	NA	400	0.3	24.42	1400000	
30-Dec-23	65630	65.63	7.36	7.72	125	16	276	40	270	25	NA	600	0.2	23.21	1700000	
31-Dec-23	76950	76.95	7.3	7.78	130	17	272	40	274	26	NA	500	0.3	23.71	1400000	
Average	**76212.58**	**76.21**	**7.28**	**7.76**	**128.39**	**16.97**	**284.45**	**42.84**	**263.65**	**25.74**		**535.48**	**0.27**	**23.94**	**1441935.48**	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken report

Month of Site Inspection	December 2023
Site Inspectors	1. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R). 2. Mr. Karunakar Singh AE, UPJN(R). 3. Mr. Manish Srivastava, JE, UPJN(R). 4. Mr. Jitender, JE, UPJN(R). 5. Mr. Gaurav Gupta, AECOM. 6. Mr. Sudhir Kumar Tomar, AECOM. 7. Mr. Rahul Azaad, PWPL. 8. Mr. Girijesh, 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 1st December 2023, 8th December 2023, 15th December 2023, & 23rd December 2023 and following observations were made after action taken by Concessionaire on inspection report provided by Project Engineer for November-23:

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Rajapur STP	75.23 to 81.15
2	Rajapur SPS	5.43 to 8.68
3	Mumfodganj MPS	69.65 to 74.00

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	23 to 28 mg/l
3	pH – Effluent	6.5 – 9.0	7.73 to 7.81
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	23.39 to 24.94 %
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)
1	Rajapur Facility	5730 to 6818

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

- Status of various units & records at site:

1. Latest SCADA reports regarding KPIs for Rajapur STP were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.

2. Latest SCADA reports regarding KPIs for Rajapur STP were checked to evaluate the performance of multiparameter analyzer at inlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
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 graphs for all KPIs are shown correctly on the portal. Also, sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. For associated infrastructure of Rajapur STP, reports are being generated for both Mumforganj SPS and Rajapur MPS.
   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 of STP is working.
7. Both Grit removal units are working.
8. One Mechanical Fine screens at PTU is working. One Mechanical Fine screen is under maintenance. mechanical screens are not lifting waste efficiently. Currently screens are running in auto mode through timer however differential level sensors are not working.
9. Both UASBs were working. 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.
10. It is suggested to clean the UASB reactors after regular interval of time may be once in a year 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.
11. It is suggested that for minimizing the problem of leakages from HDP inlet pipes, it is required to give proper supports under the pipes. Concessionaire to please do the needful.
12. All surface aerators were found running. It is recommended to install DO analyzer in this tank also for better monitoring.
13. It is also suggested to clean the Aeration tank for removing dead sludge which in turn will increase the efficiency of Aeration.
14. 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, dead sludge which is deposited in quiescent zone is coming along with effluent which is deteriorating the quality of effluent.
15. Both DG sets are working. It is suggested to increase the height of chimney of DG sets as per CPCB norms.
16. All sludge transfer pumps are in working condition.
17. Sludge dewatering unit is working. Poly dosing unit is working.
18. 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.
19. Installation of new chlorine analyzer at outlet is completed. It is under observation.
20. At flood pumping station, all pumps are in working condition.
21. Since the chlorine tonner storage in Rajapur STP goes beyond 4 tonners at one time hence concessionaires is required to obtain license regarding chlorine storage as per gas cylinder Rules (2016).
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 of Mumfordganj SPS at Rajapur

STP and outlet flowmeter of Mumfordganj SPS at 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. 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.
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 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.
27. As per Clause No.1.6 & 1.7.1 of Part – G in concession agreement, new Computer Maintenance Management system (CMMS) is installed which is under observation. Concessionaire is required to submit reports generated from the same for verification from UPJN/PE and after verification, same data must be provided in MPR as supporting documents for maintenance activities.
28. It is found that testing of earthing pits is not done regularly for complete site. Concessionaire is required to perform testing of earthing pits internally at least once in a quarter and externally at least once in a year. This activity must be done on priority basis considering the mishappening of STP in Uttarakhand.
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. Currently screens are running in auto mode through timer however differential level sensors are not working.
    d) Operation of mechanical screen at SPS is not possible from SCADA.
    e) All submersible pumps are in working condition. Pressure transmitter is not installed in common header line of pumps yet. Also, pumps must be kept in auto mode so that pump can start & stop on the basis of level in the sump.

30. At Mumfodganj MPS following observations were made:

    a) At tapping point of SPS, manual screen is broken from bottom side, maintenance for the same is required as lot of waste is going inside SPS which can in turn will choke the pumps.
    b) Civil maintenance is required for the floor below bypass gate at tapping point for stopping the leakage from bypass gate.
    c) One Mechanical coarse screens at MPS is working. One mechanical coarse screen is under maintenance. Currently screens are running in auto mode through timer however differential level sensors are not working.
    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.
    h) In PLC panels, indication for ON/OFF of mechanical screens, belt conveyor is not coming.

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 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 Recommendations

- 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.

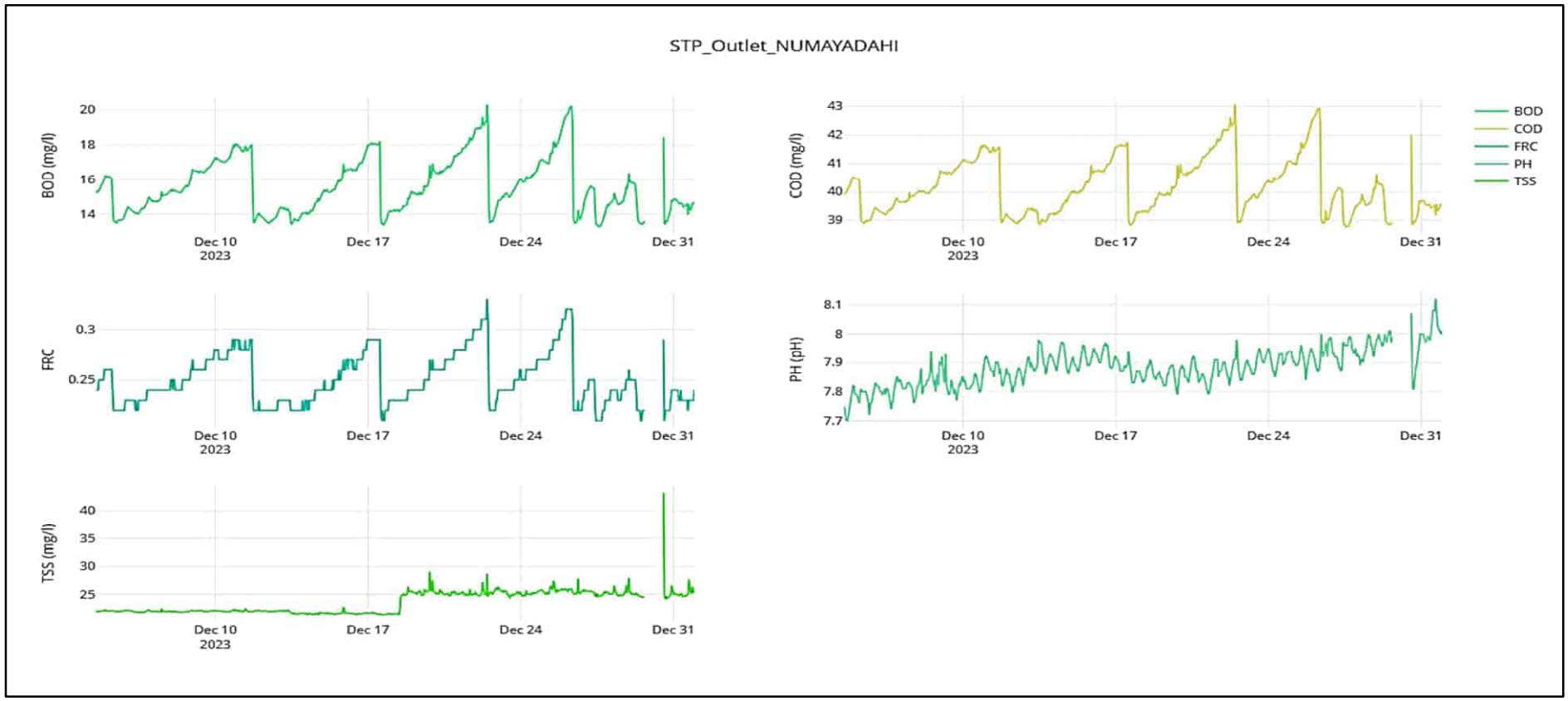
ANNEXURE-III

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 fine tuning of multi parameter analyzer from OEM is in progress.
2. FRC sensor calibration is completed but it is under observation.

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)	
01-Dec-23	56470	56.47	7.16	7.80	140	16	316	44	282	24	NA	500	0.3	24.20	1700000	
02-Dec-23	52080	52.08	7.22	7.84	145	17	304	40	268	22	NA	400	0.3	23.33	1200000	
03-Dec-23	59800	59.80	7.12	7.78	130	14	320	36	255	24	NA	500	0.2	23.50	1400000	
04-Dec-23	58580	58.58	7.06	7.77	135	16	300	44	260	23	NA	700	0.3	24.52	1300000	
05-Dec-23	57410	57.41	7.10	7.76	130	14	312	40	272	23	NA	400	0.3	23.69	1100000	
06-Dec-23	58590	58.59	7.29	7.82	145	15	304	36	276	22	NA	600	0.2	23.94	1200000	
07-Dec-23	59220	59.22	7.18	7.79	140	16	316	44	268	24	NA	500	0.3	23.31	1400000	
08-Dec-23	60800	60.80	7.23	7.86	135	15	324	44	274	23	NA	700	0.3	24.40	1400000	
09-Dec-23	58170	58.17	7.25	7.81	145	18	308	40	284	24	NA	600	0.2	22.99	1300000	
10-Dec-23	57880	57.88	7.22	7.78	145	17	316	40	267	22	NA	400	0.3	24.50	1100000	
11-Dec-23	58850	58.85	7.25	7.83	130	16	328	44	278	24	NA	700	0.3	23.28	1200000	
12-Dec-23	58600	58.60	7.20	7.87	135	14	340	36	286	21	NA	600	0.2	23.61	1700000	
13-Dec-23	57850	57.85	7.22	7.81	135	15	324	40	287	20	NA	400	0.3	24.08	1400000	
14-Dec-23	57650	57.65	7.41	7.90	145	15	320	44	253	23	NA	400	0.3	23.09	1200000	
15-Dec-23	58970	58.97	7.36	7.89	145	17	316	40	266	24	NA	600	0.2	23.12	1100000	
16-Dec-23	60400	60.40	7.37	7.93	130	16	300	44	265	23	NA	500	0.3	23.26	1700000	
17-Dec-23	58700	58.70	7.40	7.86	135	16	316	44	288	21	NA	700	0.3	24.06	1400000	
18-Dec-23	60140	60.14	7.36	7.82	125	14	324	40	292	25	NA	400	0.2	23.1	1200000	
19-Dec-23	58420	58.42	7.41	7.84	140	17	304	44	286	27	NA	600	0.3	24.22	1700000	
20-Dec-23	57610	57.61	7.33	7.86	145	18	296	40	256	25	NA	400	0.3	23.12	1300000	
21-Dec-23	60000	60	7.34	7.87	130	17	312	40	264	24	NA	700	0.2	22.77	1200000	
22-Dec-23	59780	59.78	7.36	7.9	135	16	312	44	252	25	NA	600	0.3	23.84	1400000	
23-Dec-23	60300	60.3	7.31	7.88	130	14	320	36	260	26	NA	400	0.3	24.06	1100000	
24-Dec-23	58650	58.65	7.27	7.9	135	16	316	40	248	22	NA	600	0.3	23.88	1200000	
25-Dec-23	60000	60	7.3	7.92	145	18	324	44	276	26	NA	700	0.2	23.81	1400000	
26-Dec-23	57020	57.02	7.29	7.93	140	16	308	40	270	24	NA	400	0.3	22.04	1200000	
27-Dec-23	60150	60.15	7.34	7.91	130	14	316	36	284	26	NA	700	0.3	23.4	1400000	
28-Dec-23	56900	56.9	7.22	7.94	135	16	324	40	289	27	NA	500	0.2	24.18	1100000	
29-Dec-23	32150	32.15	7.21	7.92	125	14	304	36	266	23	NA	600	0.3	23.26	1400000	Ghaghar Nalla SPS was shut down due to pipeline leakge near railway under pass(At 4.00 PM 29/12/2023 to 12.20 PM 30/12/2023)
30-Dec-23	28620	28.62	7.19	7.94	135	13	312	40	290	25	NA	400	0.3	24.1	1300000	
31-Dec-23	60700	60.7	7.19	7.99	140	16	320	36	280	26	NA	600	0.2	23.05	1700000	
Average	**56789.03**	**56.79**	**7.26**	**7.86**	**136.61**	**15.68**	**314.71**	**40.52**	**272.32**	**23.81**		**541.94**	**0.27**	**23.60**	**1335483.87**	

Source: Logbook of Laboratory at Sewage Treatment Plant

1.2 Action taken report

Month of Site Inspection	December 2023
Site Inspectors	1. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R). 2. Mr. Karunakar Singh AE, UPJN(R). 3. Mr. Rahul Paswan, JE, UPJN(R). 4. Mr. Jitender, JE, UPJN(R). 5. Mr. Gaurav Gupta, AECOM. 6. Mr. Sudhir Kumar Tomar, AECOM. 7. Mr. Rahul Kumar Azaad, PWPL. 8. Mr. Vijay, PWPL. 9. 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 November 2023, 6th December 2023, 13th December 2023, & 26th December 2023 and following observations were made after action taken by Concessionaire on inspection report provided by Project Engineer for November-23:

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Numayadahi STP	52.08 to 60.80
2	Ghagharnalla MPS	53.34 to 63.15
3	Sasur Kadheri SPS	27.47 to 35.25
4	Lukerganj SPS	3.31 to 5.17

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	20 to 25 mg/l
3	pH – Effluent	6.5 – 9.0	7.76 to 7.93
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.99 to 24.52 %
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)
1	Numayadahi Facility	13615 to 15238

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

- Status of various units & records at site:

1. Latest SCADA reports regarding KPIs for Numayadahi STP were checked to evaluate the

performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.

2. Latest SCADA reports regarding KPIs for Numayadahi STP were checked to evaluate the performance of multiparameter analyzer at inlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Communication of data from PLC system of Ghagharnalla MPS, Sasur Kadheri SPS and Lukarganj SPS is coming to SCADA system of STP. 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. There is variation in between inlet flowmeter of STP and outlet flowmeter of Ghagharnalla MPS. Concessionaire is required to resolve this problem.
6. Flowmeter at outlet of STP is working. There is variation in between inlet and outlet flow which is more than water loss shown for the STP. Concessionaire is required to resolve this problem.
7. Both grit removal units are in operation.
8. Both Mechanical Screens are working. Currently screens are running in auto mode through timer however differential level sensors are not working. Repairing of electrical panel for screens is required.
9. All Biotowers were in operation. Arms for one biotower are replaced and it is running satisfactorily. Therefore, Concessionaire is required do the needful for the arms of biotower mechanism for remaining two biotowers which are also completely rusted and can broke at any time due to which treatment in these biotowers will be completely stopped. Replacement of net is also required for all biotowers.
10. Though overhauling of mechanical screens is completed in rehabilitation period but still considerable amount of plastic waste is reaching the biotowers hence the gap must be checked around mechanical screens or otherwise this plastic waste can choke up the media which will ultimately lower the efficiency of Biotowers.
11. All Aeration tanks are working.
12. 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, 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. All sludge feed pumps and poly dosing pumps are working.
16. Housekeeping near dewatering area is very shabby and must be improved.
17. Drainage system must be provided near the sludge collection area of dewatering system for avoiding sludge accumulation.
18. All Sludge Recirculation Pumps are in working condition. Cleaning of sludge in valve chamber is required to avoid generation of mosquitos and in turn disease caused by them.
19. Both Secondary clarifiers were found in operation. It is suggested to plan for cleaning of both clarifiers before start of Magh Mela – 2023.
20. Thickener was found in operation.
21. Both booster pumps & both chlorinators are in working condition. Residual chlorine was checked & found to be around 0.2 – 0.3 mg/l.
22. Leak detection and leak absorption system are working. It must be ensured that the system must remain in auto mode all the time.
23. Installation of new chlorine analyzer at outlet is completed. It is under observation.
24. Since the chlorine tonner storage in Numayadahi STP goes beyond 4 tonners at one time hence

concessionaires is required to obtain license regarding chlorine storage as per gas cylinder Rules (2016).

25. Both DGs are working.
26. Minor Seepages from Biotowers & some other units can be seen, and this must be rectified.
27. As per Clause No.1.6 & 1.7.1 of Part – G in concession agreement, new Computer Maintenance Management system (CMMS) is installed which is under observation. Concessionaire is required to submit reports generated from the same for verification from UPJN/PE and after verification, same data must be provided in MPR as supporting documents for maintenance activities.
28. Make a proper store for storage for flammable and hazardous materials including spare parts.
29. Painting of units in the STP is completed from outside. It is suggested to start the painting work for all units from inside also.
30. Housekeeping and cleaning must be improved for all units.
31. All CCTV cameras installed at site are not working except for the outlet and DG room of STP.
32. It is found that testing of earthing pits is not done regularly for complete site. Concessionaire is required to perform testing of earthing pits internally at least once in a quarter and externally at least once in a year. This activity must be done on priority basis considering the mishappening of STP in Uttarakhand.
33. 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 catchment area of nalla 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) All HNC pumps are in working condition.
    d) Currently, there was minor leakage of sewage from the retaining wall at the tapping point of MPS, this must be rectified as raw sewage is going directly into the river.
    e) Both Mechanical screens are working.
    f) Both DG sets are working.
    g) During the shutdown taken in the month of May-21, NRV was taken out from the main header line for maintenance purpose, but it is not reinstalled till date. Concessionaire to please do the needful so that effect of back hammering on the pumps can be reduced.
    h) Painting of units in the MPS is completed from outside. It is suggested to start the painting work for all units from inside also.
    i) In PLC panels, indication for ON/OFF of mechanical screens, belt conveyor is not coming.

34. 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 around 200-230% of the total capacity of SPS i.e., 15 MLD. Due to the amount of overloading on the SPS, overflow of the sewage from retaining wall cannot be stopped. Hence, UPJN is requested to please look into the matter and do the needful.
    b) Currently all submersible pumps in the SPS are OK for operation.
    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 start the painting work for all units from inside also.
    f) In PLC panels, indication for ON/OFF of mechanical screens, belt conveyor is not coming.

35. 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.
e) In PLC panels, indication for ON/OFF of mechanical screens, belt conveyor is not coming.

36. 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:

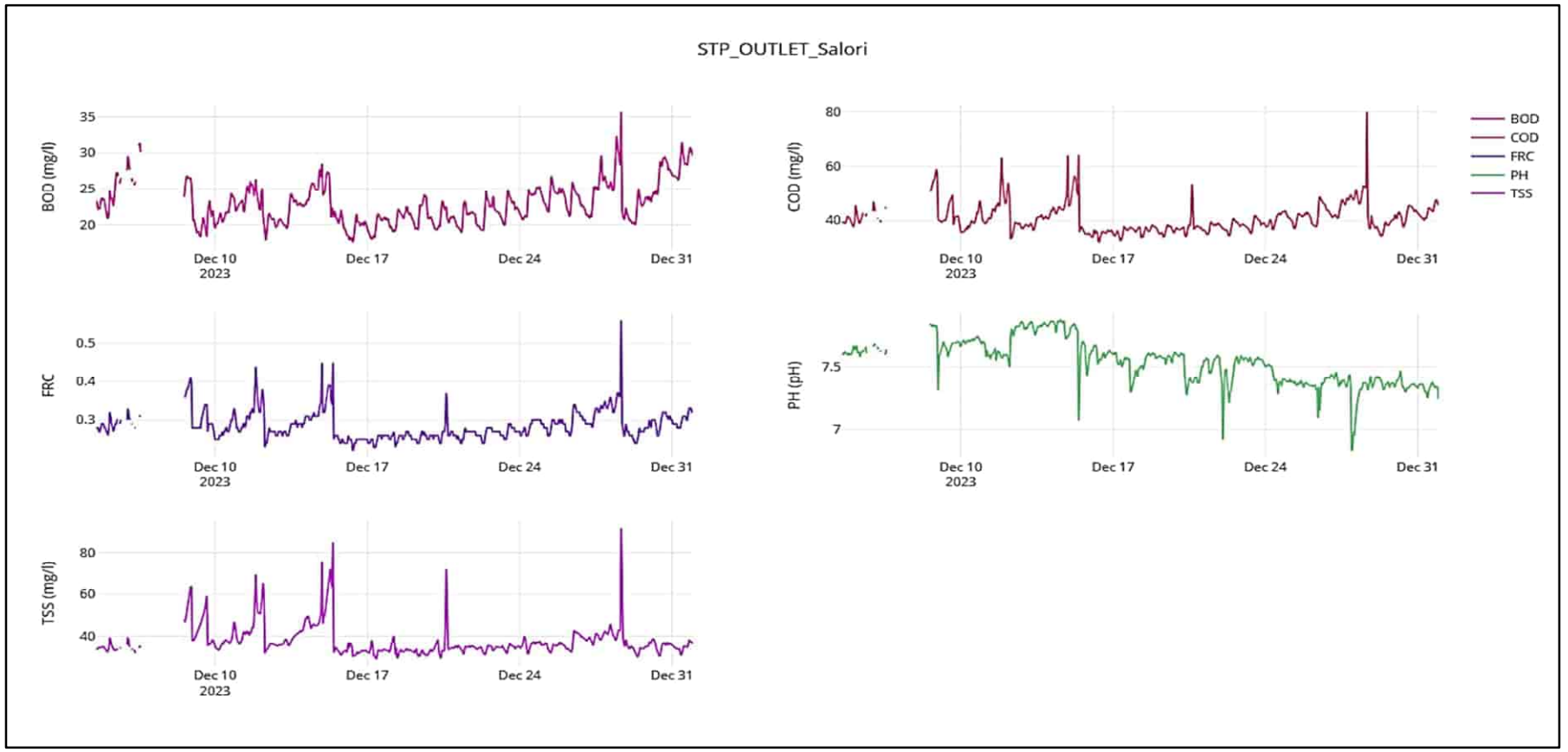
a) Portable samplers must be provided to collect composite samples for monitoring from inlet and outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.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

- 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 fine tuning of multi parameter analyzer from OEM is in progress.
2. FRC sensor calibration is completed but it is under observation.

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		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)	
01-Dec-23	42860	42.86	7.74	7.78	165	27	352	44	326	34	NA	400	0.3	21.90	1400000	
02-Dec-23	43440	43.44	7.72	7.75	170	29	364	48	346	37	NA	500	0.3	22.60	1300000	
03-Dec-23	44010	44.01	7.48	7.74	165	28	368	48	354	38	NA	700	0.2	23.20	1700000	
04-Dec-23	41110	41.11	7.52	7.61	155	24	360	40	356	36	NA	600	0.3	23.90	1200000	
05-Dec-23	40430	40.43	7.50	7.62	160	27	364	44	355	35	NA	400	0.3	23.10	1400000	
06-Dec-23	45200	45.20	7.55	7.67	165	29	352	44	328	37	NA	500	0.3	23.50	1700000	
07-Dec-23	41300	41.30	7.48	7.56	160	28	344	48	296	40	NA	700	0.2	22.90	1300000	
08-Dec-23	44290	44.29	7.52	7.68	155	23	348	44	323	43	NA	500	0.3	23.60	1400000	
09-Dec-23	43260	43.26	7.56	7.63	150	21	352	44	332	41	NA	600	0.2	23.90	1300000	
10-Dec-23	43540	43.54	7.55	7.68	155	22	360	40	338	39	NA	400	0.3	23.20	1200000	
11-Dec-23	39180	39.18	7.51	7.57	160	24	372	48	354	42	NA	700	0.3	24.00	1400000	
12-Dec-23	42540	42.54	7.49	7.72	160	22	364	44	348	43	NA	500	0.2	24.60	1700000	
13-Dec-23	42510	42.51	7.58	7.73	155	23	348	48	335	40	NA	600	0.3	23.90	1300000	
14-Dec-23	39260	39.26	7.58	7.76	165	26	352	44	340	45	NA	400	0.2	23.50	1100000	
15-Dec-23	35430	35.43	7.62	7.71	150	21	344	40	312	40	NA	600	0.3	24.78	1400000	
16-Dec-23	38620	38.62	7.59	7.62	155	20	340	36	288	33	NA	500	0.3	24.70	1300000	
17-Dec-23	38680	38.68	7.61	7.64	160	21	348	36	311	31	NA	700	0.2	18.41	1700000	
18-Dec-23	35910	35.91	7.57	7.62	165	22	360	48	280	32	NA	500	0.3	23.07	1400000	
19-Dec-23	36530	36.53	7.65	7.57	160	23	340	36	298	34	NA	600	0.2	23.24	1100000	
20-Dec-23	35020	35.02	7.63	7.54	155	21	348	40	306	37	NA	400	0.3	22.74	1300000	
21-Dec-23	35430	35.43	7.66	7.51	160	22	360	36	357	35	NA	500	0.3	23.09	1700000	
22-Dec-23	35770	35.77	7.63	7.52	155	21	344	40	312	36	NA	700	0.2	23.18	1400000	
23-Dec-23	36030	36.03	7.58	7.54	165	24	360	40	342	35	NA	600	0.3	23.47	1300000	
24-Dec-23	40270	40.27	7.64	7.45	160	22	364	44	327	37	NA	700	0.3	22.77	1400000	
25-Dec-23	41120	41.12	7.58	7.47	165	26	352	40	313	36	NA	500	0.3	23.28	1700000	
26-Dec-23	46070	46.07	7.62	7.49	160	25	348	44	330	38	NA	400	0.2	23.67	1200000	
27-Dec-23	44510	44.51	7.58	7.46	170	24	360	48	318	36	NA	600	0.2	24.33	1400000	
28-Dec-23	40600	40.60	7.63	7.35	165	25	364	44	344	37	NA	500	0.3	22.18	1100000	
29-Dec-23	39640	39.64	7.59	7.46	155	22	348	40	332	34	NA	700	0.2	23.81	1700000	
30-Dec-23	38060	38.06	7.61	7.38	165	25	344	40	321	37	NA	600	0.3	22.23	1400000	
31-Dec-23	38340	38.34	7.64	7.41	160	27	360	44	343	35	NA	500	0.3	23.24	1300000	
Average	**40289.03**	**40.29**	**7.59**	**7.59**	**160.16**	**24.00**	**354.32**	**42.71**	**327.90**	**37.19**		**551.61**	**0.26**	**23.23**	**1393548.39**	

Source: Logbook of Laboratory at Sewage Treatment Plant

2.2 Action taken report

Month of Site Inspection	December 2023
Site Inspectors	1. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R). 2. Mr. Karunakar Singh AE, UPJN(R). 3. Mr. Rahul Paswan, JE, UPJN(R). 4. Mr. Jitender, JE, UPJN(R). 5. Mr. Gaurav Gupta, AECOM. 6. Mr. Sudhir Kumar Tomar, AECOM. 7. Mr. Rahul Azaad, PWPL. 8. Mr. Vaibhav, PWPL
Place(s) of Inspection	• 29 MLD STP at Salori, Prayagraj. • 29 MLD MPS at Salori, Prayagraj.

Visit was done on 30th November 2023, 6th December 2023, 13th December 2023, & 26th December 2023 and following observations were made after action taken by Concessionaire on inspection report provided by Project Engineer for November-23:

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Salori STP	35.43 to 45.20
2	Salori MPS	35.43 to 45.20

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 29 mg/l
2	TSS – Effluent	< 50 mg/l	31 to 45 mg/l
3	pH – Effluent	6.5 – 9.0	7.56 to 7.78
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	21.90 to 24.78 %
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)
1	Salori Facility	5483.26 to 6726.42

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

- Status of various units & records at site:

1. Latest SCADA reports regarding KPIs for Salori STP were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.

2. Latest SCADA reports regarding KPIs for Salori STP were checked to evaluate the performance of multiparameter analyzer at inlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
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 data from 1:15 PM on 5th Dec 2023 to 02:45 PM on 8th Dec 2023. Also, sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Flowmeter at inlet of STP is working.
5. Flowmeter at outlet of STP is working. There is variation in between inlet and outlet flow which is more than water loss shown for the STP. Concessionaire is required to resolve this problem.
6. All Grit Removal Units are working.
7. One Mechanical Screens is working & One Mechanical screen is under maintenance. Also, when in operation, both mechanical screens are not able to lift screenings efficiently hence it is suggested to replace the screens. Also, life of screens is complete as they have crossed 15 years since both were taken in operation in year 2007. Currently screens are running in auto mode through timer however differential level sensors are not working.
8. Both FAB units are working. DO analyzers for both FAB units are not working, please rectify the problem.
9. All three aeration blowers are working.
10. 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.
11. During recent visit it was observed that accumulation of sludge in both clarisettlers was way beyond normal and due to which outlet quality was not good. This is not acceptable as BOD load & TSS load received inside the STP is within design parameters. Also, these kinds of incidents are observed in past also hence Concessionaire is required to rectify the problem or otherwise strict action will be taken if any kind of negligence is recorded in future.
12. In clarisettlers it is observed that when agitators are operated, sludge starts coming to the top due to which quality deteriorates. Hence, it is suggested to do necessary modifications in agitators so that the problem can be rectified.
13. Quality of effluent was not satisfactory during visit.
14. Sludge dewatering unit is in operation, poly dosing unit is in operation.
15. Sludge dewatering unit is not working satisfactorily as it is not producing sludge efficiently due to problem in both volute press. Due to this sludge withdrawal from the system is not efficient which in turn is deteriorating the quality of effluent.
16. Currently, due to problem in sludge dewatering unit sludge is being sent to sludge drying beds. At present, only half of sludge drying bed is empty out of all SDBs. Though the cleaning of SDBs is in progress but Concessionaire is required to expedite the work for avoiding any emergency situation in the facility.
17. Housekeeping of the plant must be improved, sludge scattered in plant premises due to transfer must be cleaned regularly.
18. Both Sludge transfer pumps for Clarisettler are working.
19. Both Filtrate pumps are working.
20. Both chlorinators are working. Both booster pumps are working.
21. Vacuum gauges for both chlorinators are not working, replacement for the same is required.
22. Installation of new chlorine analyzer at outlet is completed. It is under observation.
23. Leak detection and leak absorption system are working. It must be ensured that the system must remain in auto mode all the time.
24. Thickener unit is working. Cleaning of scum from top and lunder is required.
25. Both DGs are working.
26. 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.
27. 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.

28. 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.
29. 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.
30. 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.
31. As per Clause No.1.6 & 1.7.1 of Part – G in concession agreement, new Computer Maintenance Management system (CMMS) is installed which is under observation. Concessionaire is required to submit reports generated from the same for verification from UPJN/PE and after verification, same data must be provided in MPR as supporting documents for maintenance activities.
32. Commissioning of Public Address System is not completed yet.
33. Housekeeping near FeCl3 dosing system needs to be improved.
34. All CCTV cameras are working.
35. Make a proper store for storage of flammable and hazardous materials including spare parts.
36. It is found that testing of earthing pits is not done regularly for complete site. Concessionaire is required to perform testing of earthing pits internally at least once in a quarter and externally at least once in a year. This activity must be done on priority basis considering the mishappening of STP in Uttarakhand.
37. 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.

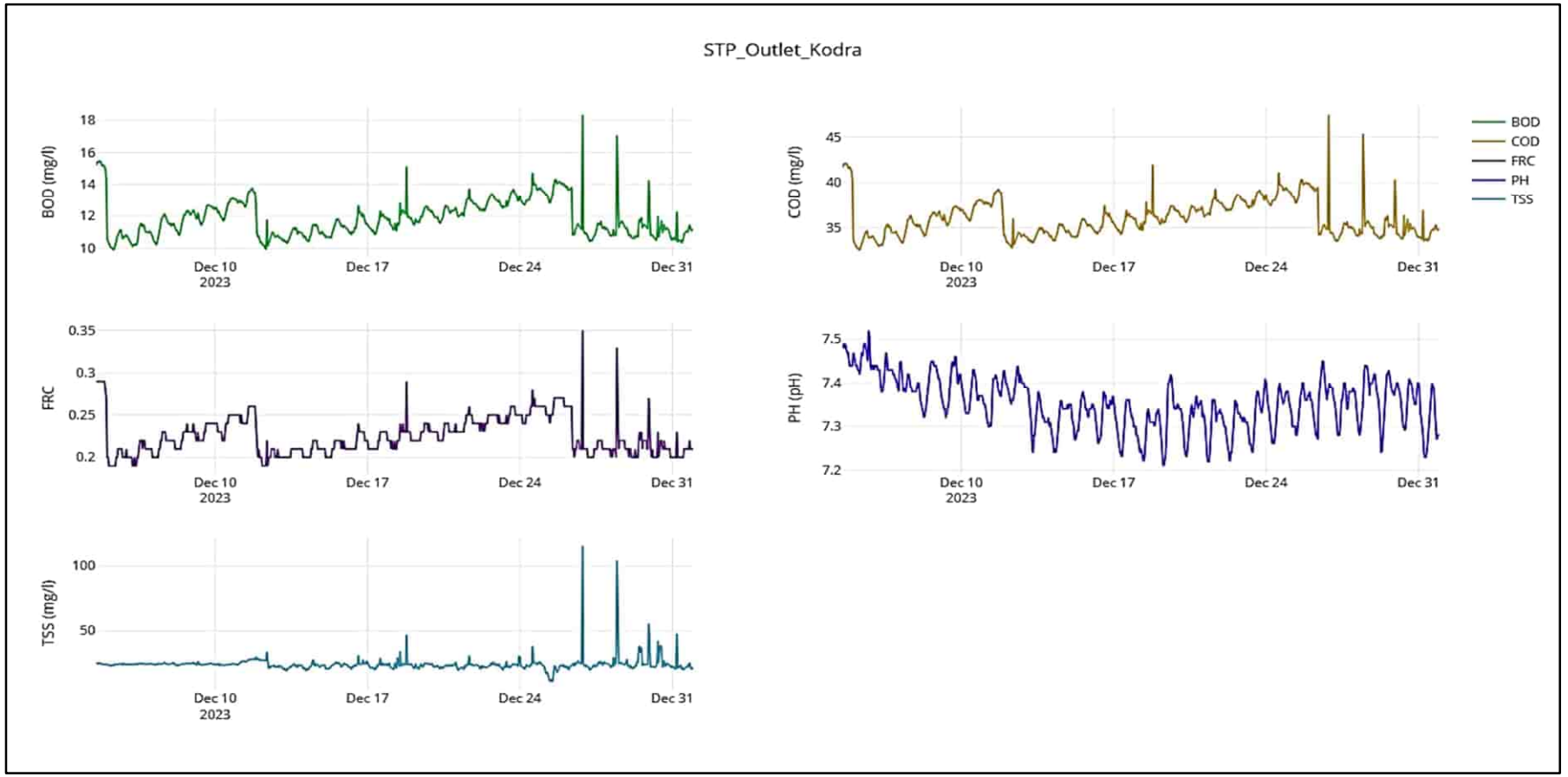
2.3 Recommendations

- 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 fine tuning of multi parameter analyzer from OEM is in progress.
2. FRC sensor calibration is completed but it is under observation.

kodra STP, 25 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)	
01-Dec-23	29050	29.05	7.34	7.42	130	15	324	44	296	23	NA	500	0.3	23.60	1400000	
02-Dec-23	29490	29.49	7.03	7.51	140	11	336	36	308	26	NA	400	0.2	23.38	1700000	
03-Dec-23	30090	30.09	7.16	7.48	135	14	320	40	291	25	NA	500	0.2	23.50	1300000	
04-Dec-23	28880	28.88	7.22	7.46	130	15	340	44	314	23	NA	600	0.3	23.14	1100000	
05-Dec-23	28310	28.31	7.41	7.49	120	10	360	32	342	24	NA	400	0.2	22.88	1400000	
06-Dec-23	29530	29.53	7.14	7.43	125	11	364	36	353	25	NA	600	0.2	23.47	1300000	
07-Dec-23	31800	31.80	6.94	7.42	120	11	380	32	375	23	NA	700	0.2	23.71	1200000	
08-Dec-23	30760	30.76	7.02	7.38	125	12	388	36	392	24	NA	600	0.3	24.21	1700000	
09-Dec-23	30300	30.30	7.13	7.37	130	11	372	36	351	23	NA	400	0.3	23.29	1400000	
10-Dec-23	29900	29.90	7.08	7.38	125	12	324	40	318	24	NA	500	0.2	22.99	1100000	
11-Dec-23	29990	29.99	7.21	7.39	130	13	320	36	307	26	NA	700	0.2	23.22	1300000	
12-Dec-23	28510	28.51	7.17	7.41	125	11	332	32	322	24	NA	400	0.2	23.74	1200000	
13-Dec-23	27750	27.75	7.24	7.36	135	10	328	36	308	22	NA	700	0.2	22.96	1400000	
14-Dec-23	29020	29.02	7.27	7.35	130	11	340	32	301	21	NA	500	0.2	23.38	1100000	
15-Dec-23	29570	29.57	7.24	7.36	135	12	352	36	318	23	NA	400	0.3	24.35	1400000	
16-Dec-23	29980	29.98	7.27	7.35	130	11	344	36	326	24	NA	500	0.3	23.43	1300000	
17-Dec-23	30650	30.65	7.28	7.36	125	12	332	32	313	23	NA	400	0.3	24.07	1100000	
18-Dec-23	29230	29.23	7.29	7.35	125	12	340	36	318	25	NA	700	0.2	23.39	1700000	
19-Dec-23	29840	29.84	7.24	7.37	135	11	352	36	322	22	NA	600	0.3	22.86	1400000	
20-Dec-23	29480	29.48	7.27	7.36	135	12	320	40	295	21	NA	400	0.3	23.52	1100000	
21-Dec-23	28560	28.56	7.30	7.34	120	13	312	36	286	23	NA	700	0.2	24.17	1700000	
22-Dec-23	29470	29.47	7.39	7.32	130	12	348	40	341	24	NA	500	0.3	23.49	1200000	
23-Dec-23	28830	28.83	7.40	7.30	125	13	312	37	290	25	NA	600	0.3	23.82	1400000	
24-Dec-23	30610	30.61	7.19	7.36	130	14	320	40	303	26	NA	500	0.3	24.29	1100000	
25-Dec-23	28060	28.06	7.17	7.38	125	12	316	40	292	20	NA	400	0.2	24.46	1300000	
26-Dec-23	28400	28.40	7.22	7.40	120	13	308	36	288	23	NA	600	0.3	24.67	1200000	
27-Dec-23	28420	28.42	7.26	7.37	130	11	324	32	297	22	NA	500	0.2	23.81	1400000	
28-Dec-23	28550	28.55	7.24	7.40	125	10	332	36	306	23	NA	400	0.3	23.43	1300000	
29-Dec-23	27920	27.92	7.28	7.39	130	11	316	32	301	24	NA	700	0.2	24.14	1200000	
30-Dec-23	28810	28.81	7.28	7.37	125	12	312	36	295	25	NA	400	0.3	22.58	1100000	
31-Dec-23	28460	28.46	7.22	7.34	135	11	332	32	305	21	NA	600	0.2	23.45	1400000	
Average	**29297.42**	**29.30**	**7.22**	**7.39**	**128.39**	**11.90**	**335.48**	**36.29**	**315.29**	**23.45**		**529.03**	**0.25**	**23.59**	**1319354.84**	

Source: Logbook of Laboratory at Sewage Treatment Plant

3.2 Action taken report

Month of Site Inspection	December 2023
Site Inspectors	1. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R). 2. Mr. Karunakar Singh AE, UPJN(R). 3. Mr. Narendra, JE, UPJN(R). 4. Mr. Jitender, JE, UPJN(R) 5. Mr. Gaurav Gupta, AECOM. 6. Mr. Sudhir Kumar Tomar, AECOM. 7. Mr. Rahul Azaad, PWPL. 8. Mr. Rajan, PWPL.
Place(s) of Inspection	• 25 MLD STP at Kodra, Prayagraj • 25 MLD MPS at Kodra, Prayagraj

Visit was done on 30th November 2023, 6th December 2023, 13th December 2023, & 26th December 2023 and following observations were made after action taken by Concessionaire on inspection report provided by Project Engineer for November-23:

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Kodra STP	27.75 to 31.80
2	Kodra MPS	27.75 to 31.80

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	10 to 15 mg/l
2	TSS – Effluent	< 30 mg/l	21 to 26 mg/l
3	pH – Effluent	6.5 – 9.0	7.35 to 7.51
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100 ml
5	Consistency – Sludge	> 20 %	22.88 to 24.35%
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 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)
1	Kodra Facility	5530 to 6210

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

- Status of various units & records at site:

1. Latest SCADA reports regarding KPIs for Kodra STP were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.

2. Latest SCADA reports regarding KPIs for Kodra STP were checked to evaluate the performance of multiparameter analyzer at inlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
3. Data transfer from online analyzer at the outlet of STP to CPCB servers is in progress. By studying the graph available at the online portal, it was found that sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Flowmeter at inlet of STP is working.
5. Flowmeter at outlet of STP is working. There is variation in between inlet and outlet flow which is more than water loss shown for the STP. Concessionaire is required to resolve this problem.
6. Both grit removal units are working.
7. Both Mechanical Fine Screens at PTU are working. Currently screens are running in auto mode through timer however differential level sensors are not working.
8. All Biotowers are working. Small amount of plastic waste is reaching the biotowers which must be rectified by doing overhauling of mechanical screens at PTU.
9. All Aeration tanks are working.
10. One DO Analyzer out of two is 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 0.2 mg/l.
19. Installation of new chlorine analyzer at outlet is completed. It is under observation.
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. One Mechanical coarse Screens at MPS is working. One Mechanical coarse Screens is under maintenance Currently screens are running in auto mode through timer however differential level sensors are not working.
22. 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.
23. Landscaping of site must be improved; it needs to be made better.
24. Make a proper store for storage of flammable and hazardous materials including spare parts.
25. 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.
26. As per Clause No.1.6 & 1.7.1 of Part – G in concession agreement, new Computer Maintenance Management system (CMMS) is installed which is under observation. Concessionaire is required to submit reports generated from the same for verification from UPJN/PE and after verification, same data must be provided in MPR as supporting documents for maintenance activities.
27. Commissioning of Public Address System is not completed yet.
28. Painting of units in the STP is completed from outside. It is suggested to start the painting work for all units from inside also.
29. It is found that testing of earthing pits is not done regularly for complete site. Concessionaire is required to perform testing of earthing pits internally at least once in a quarter and externally at least once in a year. This activity must be done on priority basis considering the mishappening of STP in Uttarakhand.
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:

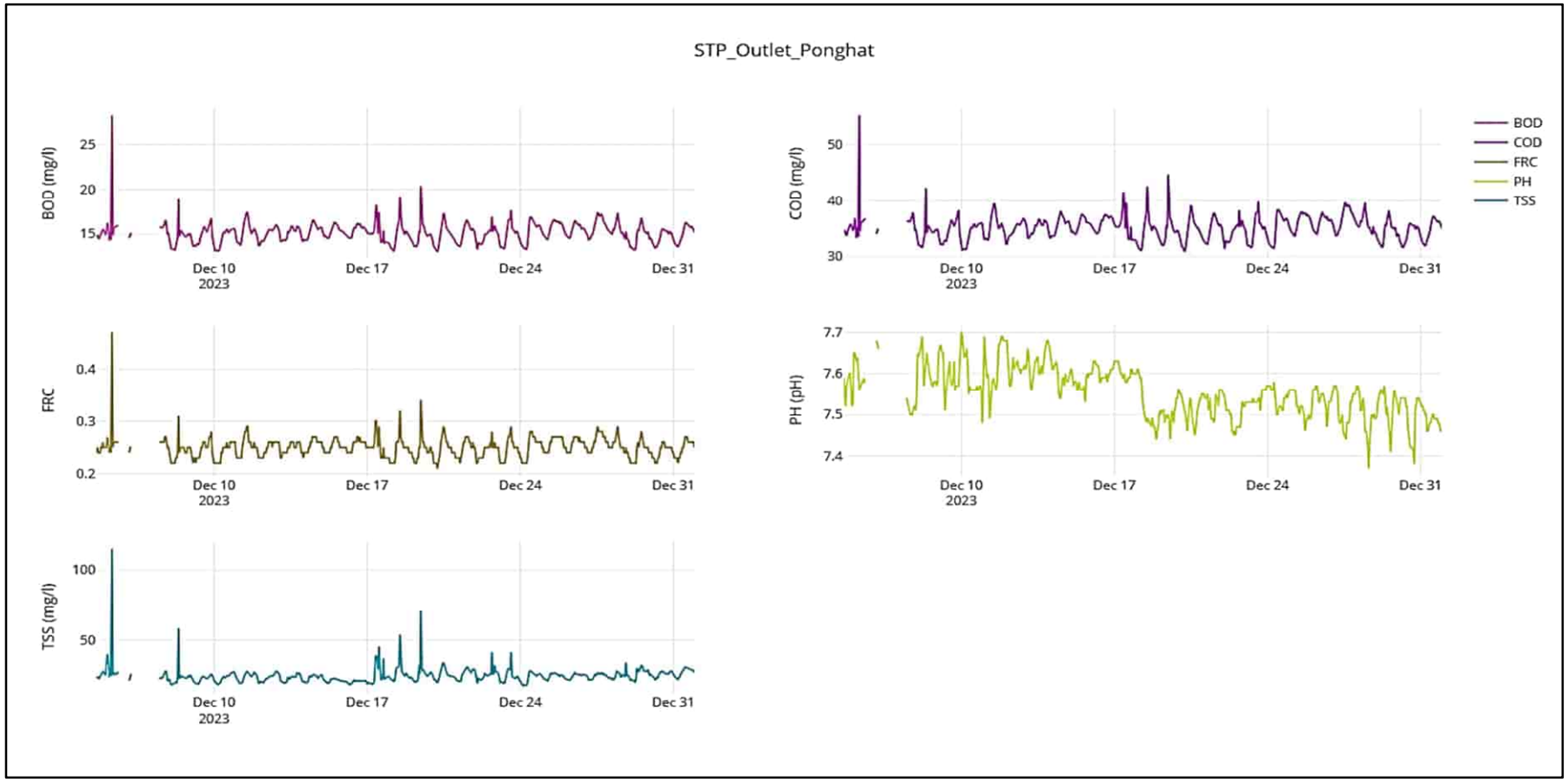
a) Portable samplers must be provided to collect composite samples for monitoring from outlet of STP as per clause no. 1.3.1 in Part-E of Schedule-10 of CA. Also, all the instruments as mentioned in Table-3 given in clause no. 1.3.1 in Part-E of Schedule-10 of CA must be maintained in the laboratory.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

- 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 fine tuning of multi parameter analyzer from OEM is in progress.
2. FRC sensor calibration is completed but it is under observation.

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)	
01-Dec-23	12050	12.05	6.72	7.54	130	15	300	32	234	27	NA	500	0.3	24.12	1200000	
02-Dec-23	12540	12.54	7.06	7.69	140	16	292	36	226	26	NA	700	0.2	23.74	1400000	
03-Dec-23	12140	12.14	7.28	7.72	135	15	288	36	218	25	NA	600	0.3	23.46	1300000	
04-Dec-23	11560	11.56	7.18	7.70	130	16	296	32	224	27	NA	400	0.2	23.80	1700000	
05-Dec-23	12300	12.30	7.23	7.68	140	15	300	40	228	29	NA	500	0.3	24.09	1500000	
06-Dec-23	11560	11.56	7.19	7.73	135	17	304	36	232	23	NA	700	0.2	23.94	1200000	
07-Dec-23	11660	11.66	7.17	7.67	130	16	312	40	238	24	NA	600	0.3	24.12	1300000	
08-Dec-23	12330	12.33	7.23	7.52	125	15	292	36	223	23	NA	400	0.2	23.62	1700000	
09-Dec-23	12410	12.41	7.26	7.51	135	16	296	32	226	24	NA	700	0.3	24.36	1400000	
10-Dec-23	13240	13.24	7.18	7.66	130	15	312	36	242	25	NA	500	0.2	23.16	1200000	
11-Dec-23	14030	14.03	7.14	7.73	130	17	308	36	238	26	NA	600	0.3	23.96	1300000	
12-Dec-23	13600	13.60	7.22	7.78	135	16	292	32	220	25	NA	400	0.2	23.46	1100000	
13-Dec-23	12820	12.82	7.32	7.58	130	14	288	36	215	24	NA	700	0.2	23.72	1200000	
14-Dec-23	12360	12.36	7.11	7.67	140	16	284	36	205	25	NA	500	0.3	24.08	1300000	
15-Dec-23	12510	12.51	7.09	7.72	130	15	300	40	230	23	NA	600	0.2	24.16	1700000	
16-Dec-23	11800	11.80	7.15	7.58	140	16	312	36	235	22	NA	400	0.3	24.30	1400000	
17-Dec-23	13580	13.58	7.16	7.69	135	14	292	32	223	23	NA	700	0.2	23.36	1100000	
18-Dec-23	13610	13.61	7.22	7.62	130	16	296	36	229	27	NA	500	0.2	24.08	1200000	
19-Dec-23	13940	13.94	7.26	7.64	135	15	304	32	237	26	NA	600	0.3	23.78	1700000	
20-Dec-23	13730	13.73	7.18	7.62	140	16	292	36	221	27	NA	400	0.2	24.24	1300000	
21-Dec-23	13360	13.36	7.08	7.67	130	15	296	32	228	24	NA	700	0.3	24.56	1400000	
22-Dec-23	12120	12.12	7.19	7.57	140	16	304	36	235	26	NA	600	0.2	23.92	1200000	
23-Dec-23	12460	12.46	7.24	7.61	135	14	288	32	219	25	NA	500	0.3	24.13	1700000	
24-Dec-23	12980	12.98	7.18	7.63	140	16	300	36	232	24	NA	400	0.2	23.87	1100000	
25-Dec-23	11650	11.65	7.20	7.66	135	17	312	40	242	26	NA	600	0.3	24.18	1300000	
26-Dec-23	13150	13.15	7.16	7.70	130	16	292	36	221	25	NA	700	0.2	23.98	1400000	
27-Dec-23	13110	13.11	7.27	7.64	135	15	308	40	243	26	NA	400	0.3	24.07	1200000	
28-Dec-23	12690	12.69	7.24	7.65	140	16	312	32	239	23	NA	500	0.2	23.46	1700000	
29-Dec-23	11580	11.58	7.32	7.63	135	15	304	36	244	24	NA	600	0.3	23.89	1300000	
30-Dec-23	12420	12.42	7.25	7.58	130	16	308	32	236	26	NA	400	0.2	23.82	1400000	
31-Dec-23	13290	13.29	6.94	7.60	140	15	312	36	245	25	NA	700	0.3	24.15	1200000	
Average	**12663.87**	**12.66**	**7.17**	**7.64**	**134.35**	**15.55**	**299.87**	**35.35**	**229.94**	**25.00**		**551.61**	**0.25**	**23.92**	**1358064.52**	

Source: Logbook of Laboratory at Sewage Treatment Plant

4.2 Inspection Report

Month of Site Inspection	December 2023
Site Inspectors	1. Mr. Syed Mohd Shabaz, EE-E&M, UPJN(R). 2. Mr. Karunakar Singh AE, UPJN(R). 3. Mr. Narendra, JE, UPJN(R). 4. Mr. Jitender, JE, UPJN(R) 5. Mr. Gaurav Gupta, AECOM. 6. Mr. Sudhir Kumar Tomar, AECOM. 7. Mr. Rahul Azaad, PWPL. 8. Mr. Rajan, PWPL.
Place(s) of Inspection	• 10 MLD STP at Ponghat, Prayagraj • 10 MLD MPS at Ponghat, Prayagraj

Visit was done on 30th November 2023, 6th December 2023, 13th December 2023, & 26th December 2023 and following observations were made after action taken by Concessionaire on inspection report provided by Project Engineer for November-23:

- Status of Availability:

S. No.	Facility Name	Actual Flow Pumped /Received at Facility (MLD)
1	Ponghat STP	11.56 to 14.03
2	Ponghat MPS	11.56 to 14.03

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

- Status of KPIs:

S. No.	Parameter Name	Design Value	Parameter Value
1	BOD – Effluent	< 20 mg/l	14 to 17 mg/l
2	TSS – Effluent	< 30 mg/l	22 to 29 mg/l
3	pH – Effluent	6.5 – 9.0	7.51 to 7.78
4	Fecal coliform – Effluent	<= 1000 MPN/100 ml	400 to 700 MPN/100ml
5	Consistency – Sludge	> 20 %	23.16 to 24.36%
6	Fecal Coliform – Sludge	< 20,00,000 MPN/gTS	1100000 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	Ponghat Facility	2349 to 2952

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

- Status of various units & records at site:

1. Latest SCADA reports regarding KPIs for Ponghat STP were checked to evaluate the performance of multiparameter analyzer at outlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.

2. Latest SCADA reports regarding KPIs for Ponghat STP were checked to evaluate the performance of multiparameter analyzer at inlet and it was found that the said SCADA reports are almost stabilized apart from some minor variations.
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 data from 1:15 PM on 5th Dec 2023 to 12:30 PM on 7th Dec 2023. Also, sudden spikes/drops can be seen in the graphs available at the online portal which is fundamentally not correct. These types of incidents have been observed in past also. Concessionaire is required to rectify these problems.
4. Flowmeter at inlet of STP is working.
5. Flowmeter at outlet of STP is working. There is variation in between inlet and outlet flow which is more than water loss shown for the STP. Concessionaire is required to resolve this problem.
6. Both Mechanical fine screens at PTU are working. Currently screens are running in auto mode through timer however differential level sensors are not working.
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. Air is coming out vigorously from 5-6 points due to problem in diffusers. Concessionaire is required to rectify the problem before start of Magh Mela for further improving the quality of effluent.
10. Both DO Analyzers at aeration tanks are not working.
11. All Aeration Blowers are working.
12. Both Centrifuges are working.
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. It is continuously observed that dewatered sludge is being dumped inside the plant. Concessionaire is required to dump the dewatered sludge in the place given by UPJN.
19. At Ponghat MPS, all 6 pumps are OK for operation. Presser transmitter is not installed at pump discharge common header.
20. Both mechanical coarses screen at MPS are working. Currently screens are running in auto mode through timer however differential level sensors are not working.
21. At Ponghat MPS, it is suggested to rectify problems in old pumps also so that they be used in emergency situation. Currently, all old pumps are not in working condition.
22. As already discussed, all the waste material obtained during Rehabilitation Works must be removed from the site as per point (h) in clause 8.8 of Concession Agreement.
23. As per Clause No.1.6 & 1.7.1 of Part – G in concession agreement, new Computer Maintenance Management system (CMMS) is installed which is under observation. Concessionaire is required to submit reports generated from the same for verification from UPJN/PE and after verification, same data must be provided in MPR as supporting documents for maintenance activities.
24. Installation of Public Address System is done but its commissioning is not completed yet.
25. Make a proper store for storage of flammable and hazardous materials including spare parts.
26. Painting of units in the STP is completed from outside. It is suggested to start the painting work for all units from inside also.
27. It is found that testing of earthing pits is not done regularly for complete site. Concessionaire is required to perform testing of earthing pits internally at least once in a quarter and externally at least once in a year. This activity must be done on priority basis considering the mishappening of STP in Uttarakhand.
28. 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 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 Recommendations

- 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 December 2023 to 31st December 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	NA	NA
4,1(ii)	Review, analysis and qualifying assessment of Design Memorandums, specifications and construction drawings prepared and submitted by the concessionaire.	Yes	NA	NA
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 December 2023 to 31st December 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	Yes	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 services and/or their reasonableness;	Yes	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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	NA	NA
	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.	Yes	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 NMCG, in respect of its duties	Yes	Yes	Yes

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

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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 Laws and Applicable Permits; and			

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	(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 send its comments/observations to	Yes	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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; (c) List of design codes and standards;	Yes	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	(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 Concessionaire and furnish its comments within 10 (ten) days of receipt thereof.	Yes	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
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	Yes	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	NA	NA
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	NA
6.3	The Project Engineer shall assist the Uttar Pradesh Jal Nigam submit their comments on effectiveness or otherwise of the Work plan submitted for meeting the specified payment	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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, the materials used and their sources, and conformity of Construction Works with the	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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 Concessionaire for ensuring that the tests are conducted in a fair and efficient manner and	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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 achieve any of the Project Milestones, the Project Engineer shall undertake a	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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 Construction Works that should be suspended for	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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.	Yes	Yes	Yes
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 schedule, to which the Concessionaire is reasonably entitled, and shall notify the NMCG/ Uttar Pradesh Jal Nigam and the Concessionaire of the same.	Yes	NA	NA
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,	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	works and services and certify the reasonableness of such costs for payment by the NMCG/ Uttar Pradesh Jal Nigam to the Concessionaire.			
6.16	The Project Engineer shall aid and advise the Concessionaire in preparing the Operation & Maintenance Manual.	Yes	NA	NA
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
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	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	and suggest changes as per clause 8.14(a)of the Concession Agreement.			
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	NA	NA
6.22	Project Engineer shall ensure that the Concessionaire shall meet the Guaranteed Interim Availability of the existing Allahabad STPs and associated infrastructure within 30 days from the Effective Date of the Concession Agreement.	Yes	NA	NA
6.23	Project Engineer shall also ensure that the STP by-products and Treated Effluents discharged from the Existing Facilities meet the relevant Discharge Standards in accordance with the Clause 9.12(c) of the Concession Agreement, from 1 year from the Effective Date	Yes	Yes	Yes
6.24	Project Engineer shall ensure that the Concessionaire shall meet the Guaranteed Interim Availability of the existing Allahabad STP and associated infrastructure within 30 days from the Effective Date of the Concession Agreement.	Yes	NA	NA
6.25	Project Engineer shall also ensure that the STP by-products and Treated	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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.			
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; 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;	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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 submitted by the concessionaire regarding the volume of sewage and its quality re influent standards and monitor and record the same on regular basis;	Yes	Yes	Yes
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

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
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 within 7 (seven) days of receipt of such report	Yes	Yes	Yes
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	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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.			
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, 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.	Yes	Yes	Yes
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	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	Damages, if any, payable by the Concessionaire to the NMCG/ Uttar Pradesh Jal Nigam for such delay.			
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.	Yes	Yes	Yes
7.15	The Project Engineer shall undertake sewage flow sampling, as and when required by the NMCG/ Uttar Pradesh Jal Nigam, under and in accordance with the provisions of this agreement.	Yes	Yes	Yes
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	Yes	Yes	Yes

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	the STP, as and when required, so as to address the gap in skill sets of the manpower deployed by the Concessionaire.			
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 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.	Yes	NA	NA

Activities Carried out as per TOR				
Clouse as per TOR	Scope	Period from 1st December 2023 to 31st December 2023		
		Undertaken till previous months	Undertaken during this month	Expected for next month
	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