BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL PRINCIPAL BENCH AT NEW DELHI

ORIGINAL APPLICATION NO. 366 OF 2023

IN THE MATTER OF:

RAJESH KUMAR DOKWAL. ..... Petitioner

Versus

GOVT OF NCT OF DELHI . .... Respondents

NDOH: 15.01.2024

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Filed by

Delhi Pollution Control Committee

Delhi

Dated:-12.01.2024

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH AT NEW DELHI

ORIGINAL APPLICATION NO 366 / 2023

In the matter of:

Rajesh Kumar Dokwal ..... Applicant

Versus

Govt. of NCT of Delhi ..... Respondent(s)

STATUS / ACTION TAKEN REPORT ON BEHALF OF DELHI POLLUTION CONTROL COMMITTEE (DPCC) WITH RESPECT TO ORDER DATED 30.10.2023.

1. That this Hon`ble Tribunal has taken up the above referred matter on 30.10.2023 and ordered as follows :

"7. In view of the above, we require the DPCC and DJB to file fresh analysis report after taking inlet and outlet sample of STPs at all the four Phases of Kondli and keeping in view the observations made above. Let the fresh reports on behalf of DPCC and DJB be filed within four weeks by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.

8. List on 15.01.2024."

2. That it is most respectfully submitted that the Status / Action Taken Report with respect to order dated 29.05.2023 was filed by Delhi Pollution Control Committee (DPCC) before the Hon`ble Tribunal on 01.08.2023.

3. That DPCC conducted analysis in the month of November, 2023 & December, 2023 after taking samples from the Inlet and Outlet of STPs at Kondli Phase-I, Phase-II, Phase-III & Phase-IV. DPCC Laboratory analysed parameters of pH, TSS, BOD, COD, Ammonical Nitrogen, Dissolved Phosphate & Faecal coliform in the month of November,2023 and pH, TSS, BOD, COD, Ammonical Nitrogen

, Dissolved Phosphate in the month of December ,2023. The STPs of Kondli Phase-I, Phase-II & Phase-III are having common Inlet from main stream.

The Tabular status of Analysis Reports at Inlet and Outlet of STPs are at **Annexure- 1**.

The brief of the analysis reports are as follows:

(i) Kondli Phase – I , II and III STPs are meeting the prescribed standards . The Analysis Reports at Inlet and Outlet are collectively enclosed as **Annexure-2 (Colly.).**

(ii) Kondli Phase – IV STP is not meeting the prescribed standards w.r.t. TSS (30 mg/l against the prescribed standard of 10 mg/l), BOD (16 mg/l against the prescribed standard of 10 mg/l) and COD (88 mg/l against the prescribed standard of 50 mg/l). Analysis Reports at Inlet and Outlet are collectively enclosed as **Annexure-3 (Colly.).**

4. That inspection of the STPs at Kondli Phase I, II, III & IV was also carried out by a team of DPCC officials on 03.01.2024. Copy of the Inspection Report dated 03.01.2024 is at **Annexure – 4.**

Deficiencies observed by team of DPCC during inspection of STPs at Kondli on 03.01.2024 are briefed below :

1. Kondli STP Phase-IV has total capacity of 45 MGD. However, half of the capacity i.e. (22.5 MGD) is being treated only and rest 22.5 MGD is being by-passed as the plant is under rehabilitation.
2. Only 01 out of 03 Odour Control Units (OCU) found operational at the time of inspection.
3. Rapid Gravity Filter (RGF) (for phase II & III) were found non-operational at the time of Inspection.
4. No OLMS found installed at Phase-II.
5. Chlorination is not being carried out in Phase-II & III.
6. Sludge Handling Units of all 04 Phases has not been commissioned yet.

(3)

5. That, Directions u/s 33(A) of Water (Prevention and Control of Pollution) Act, 1974 has been issued by DPCC to Delhi Jal Board on 11.01.2024 for proper operation of STPs at Kondli to meet the Prescribed Standards including stoppage of by-passing of untreated sewage by DJB.

Copy of the Directions dated 11.01.2024 issued by DPCC to DJB is at **Annexure-5.**

6. That DPCC vide letter dated 14.12.2023 requested Delhi Jal Board to forward the Tender Documents and Work Contract of the STPs including STPs at Kondli so that parameters used by Delhi Jal Board in procurement can be verified with the 08 parameters prescribed by DPCC.

Copy of the letter dated 14.12.2023 of DPCC is at **Annexure – 6.**

7. That Tender Document and Work Contract in respect of all the STPs which are under rehabilitation/ proposed to be rehabilitated/ New STPs have not been provided by DJB including STPs at Kondli. Only partial information in respect of Kondli Phase-IV STP has been provided by DJB and information in respect of Kondli Phase-I, II & III STPs are awaited. The matter will be pursued with DJB in this regard.

Copy of the reply of Delhi Jal Board dated 18.12.2023 is at **Annexure – 7.**

8. That, above status / action taken report may please be taken on records for consideration / further directions please.

Deepak Singh

(Deepak Kumar Singh)
Sr. Env. Engineer,
Delhi Pollution Control Committee

Delhi
Dated : 11.01.2024

Annexure-1

Tabular Status of Analysis Reports at Inlet and Outlet of STPs carried out in the month of December, 2023

Sr. No.	Installed Capacity (MGD)	STP Standard	Parameters							Remarks
			pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Ammonical Nitrogen (mg/l)	Dissolved Phosphate as P(mg/l)	Faecal Coliform (MPN/100 ml)** 230	
			6.5-9.0	10	10	50	5	2	400	-
1	Ph-I (10)	Inlet*	7.3	228	98	304	27.6	25.4	27	Meeting the prescribed standards
		Outlet	7.5	10	6	40	2.1	1.5	80	Meeting the prescribed standards.
2	Ph-II (25)	Outlet	7.1	8	5	32	1.5	1.3	90	Meeting the prescribed standards.
3	Ph-III (10)	Outlet	7.5	8	4	16	1.4	1.4	500	
4	Ph-IV (45)	Inlet	7.3	204	175	224	18.9	23.5	170	Not Meeting the Standards w.r.t. TSS, BOD and COD
		Outlet	7.5	**30**	**16**	**88**	1.1	1.3		

* Ph-I, II & III have common Inlet Point.

** Analysis of Faecal Coliform was carried out by DPCC Laboratory in the month of November, 2023.

ANNEXURE -2(Colly)

(59)

DELHI POLLUTION CONTROL COMMITTEE
(Government of N.C.T. of Delhi) 4th & 5th Floor, ISBT Building
Kashmere Gate, Delhi 110006
(Visit us at https://www.dpccocmms.nic.in)

Report Number: DPCC/W/STP/23-24/227/546 Dated 05/01/2024

ANALYSIS REPORT OF STP FOR THE MONTH OF DECEMBER-2023

1. Name of STP : **Kondli**
2. Sampling location : **Inlet and Outlet of STP**
3. Date of Inspection : **13.12.2023**
4. Samples collected by : **DPCC Lab**
5. Parameters analyzed and results :

Sr. No.	Installed Capacity (MGD)	STP Standard	Parameters							Remarks
			pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Oil & Grease (mg/l)	Ammonical Nitrogen (mg/l)	Dissolved Phosphate as P(mg/l)	
			6.5-9.0	10	10	50	10	5	2	
1	Ph-I (10)	Inlet	7.3	228	98	304	4.8	27.6	25.4	Meeting the standards.
		Outlet	7.5	10	6	40	1.6	2.1	1.5	
		OLMS	7.6	6.7	4.4	25.3	-	4.8	-	
2	Ph-II (25)	Outlet	7.1	8	5	32	1.2	1.5	1.3	Meeting the standards
		OLMS	-	-	-	-	-	-	-	OLMS was non-functional
3	Ph-III (10)	Outlet	7.5	8	4	16	1.6	1.4	1 4	Meeting the standards.
		OLMS	7.3	18.4	5.0	41.6	-	0.2	-	
Total 45										

I/C LABORATORY

Dr. Nandita Mishra

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LiFE Lifestyle for Environment

Report Number: DPCC/W/STP/23-24/200 1463

Dated 04/12/2023

ANALYSIS REPORT OF STP

1. Name of STP : **Kondli**
2. Sampling location : **Inlet and Outlet of STP**
3. Date of Inspection : **09.11.2023**
4. Samples collected by : **DPCC Lab**
5. Parameters analyzed and results :

Sr. No.	Installed Capacity (MGD)	STP Standard	Parameters								Remarks
			pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Oil & Grease (mg/l)	Ammonical Nitrogen (mg/l)	Dissolved Phosphate as P (mg/l)	Feacel Coliform as FC (MPN/100ml)	
			6.5-9.0	10	10	50	10	5	2	100	
1	Ph-I (10)	Inlet	7.4	220	96	256	4.4	27.5	25.6	4×10^2	
		Outlet	7.6	8	5	32	2	2.5	1.9	27	Meeting the standards.
		OLMS	-	-	-	-	-	-	-	-	OLMS was non-functional
2	Ph-II (25)	Outlet	7.8	10	5	32	1.2	1.8	1.1	80	Meeting the standards
		OLMS	-	-	-	-	-	-	-	-	OLMS was non-functional
3	Ph-III (10)	Outlet	7.7	6	4	24	4.1	1.6	1.7	90	Meeting the standards.
		OLMS	-	-	-	-	-	-	-	-	OLMS was non-functional
Total 45											

N Moitra

I/C LABORATORY

Dr. Nandita Moitra
Scientist 'D'

ANNEXURE-3 (Colly.)

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(Government of N.C.T. of Delhi) 4th & 5th Floor, ISBT Building
Kashmere Gate, Delhi 110006
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LiFE Lifestyle for Environment

Report Number: DPCC/W/STP/23-24/228/547

Dated 05/01/2024

ANALYSIS REPORT OF STP FOR THE MONTH OF DECEMBER-2023

1. Name of STP : **Kondli New**
2. Sampling location : **Inlet and Outlet of STP**
3. Date of Inspection : **13.12.2023**
4. Samples collected by : **DPCC Lab**
5. Parameters analyzed and results :

Sr. No.	Installed Capacity (MGD)	STP Standard	Parameters							Remarks
			pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Oil & Grease (mg/l)	Ammonical Nitrogen (mg/l)	Dissolved Phosphate as P(mg/l)	
			6.5-9.0	10	10	50	10	5	2	
1	Ph-IV (45)	Inlet	7.3	204	175	224	5.2	18.9	23.5	
		Outlet	7.5	30	16	88	2.4	1.1	1.3	Not Meeting the Standards wrt TSS, BOD & COD.
		OLMS	-	-	-	-	-	-	-	OLMS was non-functional
Total 45										

I/C LABORATORY

Dr. Nandita Mehra
Scientist 'B'

DELHI POLLUTION CONTROL COMMITTEE
(Government of N.C.T. of Delhi) 4th & 5th Floor, ISBT Building
Kashmere Gate, Delhi 110006
(Visit us at https://www.dpccocmms.nic.in)

Report Number: DPCC/W/STP/23-24/201 1464

Dated 04/12/23

ANALYSIS REPORT OF STP

1. Name of STP : **Kondli New**
2. Sampling location : **Inlet and Outlet of STP**
3. Date of Inspection : **09.11.2023**
4. Samples collected by : **DPCC Lab**
5. Parameters analyzed and results :

Sr. No.	Installed Capacity (MGD)	STP Standard	Parameters								Remarks
			pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Oil & Grease (mg/l)	Ammonical Nitrogen (mg/l)	Dissolved Phosphate as P(mg/l)	Feacal Coliform as FC (MPN/100ml)	
			6.5-9.0	10	10	50	10	5	2	100	
1	Ph-IV (45)	Inlet	7.5	216	185	256	6.8	20.6	24.6	5×10^2	Not Meeting the Standards wrt TSS, BOD COD& Feacal Coliform
		Outlet	7.3	36	19	76	3.6	1.9	1.5	170	
		OLMS	7.5	19.3	10.0	37.1	-	22.1	-	-	
Total 45											

N Moitra
I/C LABORATORY
Dr. Nandita Moitra
Scientist 'D'

ANNEXURE-4

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Inspection Report of STPs at Kondli

Inspection of STPs at Kondli was carried out by team of DPCC Officials on 03.01.2024. There are four phases of Kondli STP namely Ph-I (10 MGD), Ph-II (25 MGD), Ph-III (10 MGD) and Ph-IV (45 MGD). All the STPs at Kondli have common Inlet Point from where flow is divided into respective Phases. The Catchment Area of STPs at Kondli comprises of Preet Vihar, Jagriti Vihar, Dallupura, Kondli Ghadoli & Kalyanpuri.

Brief of the observations are as follows:

Kondli Ph-I

1. Liquid line of Plant was found operational during Inspection.
2. Flow Meter found installed at the Inlet & Outlet of STP.
3. Plant has 02 Coarse Bar Screens, 02 Fine Bar Screens and 02 Grit Chambers (Vortex type). All were found operational during the inspection.
4. Plant has 02 Primary Sedimentation Tanks (PST) and 02 Secondary Sedimentation Tanks (SST). All found operational.
5. There are 02 Aeration tanks (combination of anoxic, anaerobic & aerobic compartments) comprising of 03 Blowers with (880 x 2) diffusers. All found operational.
6. There is 01 Sludge Thickener (for sludge from PST) which was found operational during inspection. Dilution Air Flocculation (DAF) Unit is yet to be commissioned and presently complete sludge is being taken to Thickener Unit only.
7. There are 02 Chlorination tanks and chlorine dosing is being carried out.
8. Status of Sludge Units and Electricity Generation units are as follows:

Name of Unit	Operational Condition
Centrifuge	Commissioned and found operational
Sludge Thickener (for sludge from PST)	Operational
DAF (Dilution Air Flocculation) Thickener (for sludge from SST)	Civil construction & Mechanical work completed but not yet commissioned.
Sludge Digester Units	Operational (Gas is being released in atmosphere)
Gas Holding Unit	Civil construction work completed
Electricity Generation Units	Civil Construction work completed but not yet commissioned.

9. 04 unit of Rapid Gravity Filter (RGF) were found operational.
10. OLMS at the Outlet was found installed and it is in operational condition. As informed by Operator, OLMS is being calibrated on monthly basis and Calibration Reports provided by DJB are annexed at **Annexure-1**.

Kondli Ph-II & III

1. Both Plants were found operational during Inspection.
2. Flow meter is installed at the Inlet of Ph-II and Ph-III separately after Grit Chamber. However, a common Flow meter is installed at the Outlet of Ph-II and Ph-III after Chlorine Contact Tank.
3. Ph-II & Ph-III have common primary units. Plant has 05 Coarse Bar Screens, 05 Fine Bar Screens and 03 Grit Chambers (Vortex type). All were found operational during the inspection.
4. Ph-II has 02 Primary Sedimentation Tanks (PST) and 03 Secondary Sedimentation Tanks (SST).
5. Ph-III has 02 Primary Sedimentation Tanks (PST) and 03 Secondary Sedimentation Tanks (SST). All found in operational condition.
6. There are total 04 Aeration tanks 02 each for Ph-III & Ph-II (combination of anoxy, anaerobic & aerobic compartments) comprising of 03 Blowers with (880 x 2) diffusers & 06 Blowers with 4400 diffusers respectively. All found operational.
7. There are 02 Sludge Thickener (for both Phases) which were found operational during inspection. Dilution Air Flocculation (DAF) Unit is yet to be commissioned and presently complete sludge is being taken to Thickener Unit only. After thickener unit sludge is being diverted to Sludge Drying Beds. Excess waste water from Sludge reaches to sump percolating through Filter Media and being re-circulated to PST using temporary pipe arrangement.
8. The construction work of 04 Chlorination tanks is completed. However, not in operation as permission from Petroleum and Explosives Safety Organization (PESO) is not taken yet.
9. Status of Sludge Units and Electricity Generation units are as follows:

Name of Unit	Operational Condition
Centrifuge	Commissioned but not found operational
Sludge Thickener (for sludge from PST)	Operational
DAF (Dilution Air Floculation) Thickener (for sludge from SST)	Civil construction work completed but not yet commissioned.
Sludge Digester Units	Civil work completed but on hold due to leakage.
Gas Holding Unit	Installation of 01 Gas Holder has been completed and 01 is under installation.
Electricity Generation Units	Civil Construction work completed but not yet commissioned.

10. Rapid Gravity Filter (RGF) (for both phases) found non-operational during Inspection. As informed by Plant Manager, RGF is non operational due to ongoing Electrical work.
11. OLMS found installed at the outlet of Ph-III after SST. However, no OLMS found installed for Ph-II.

Kondli Ph-IV

1. Plant was found operational during inspection.
2. Plant has total capacity of 45 MGD. However, half of the capacity i.e. (22.5 MGD) is being treated only and rest 22.5 MGD is being by-passed as the plant is under rehabilitation.
3. 01 out of 03 Odour Control Units (OCU) found operational at the time of inspection. As informed by Plant Manager, 01 OCU was not operational as the unit (Sludge Thickener and Primary Filtrate Sump) connected to particular OCU is under rehabilitation and 01 OCU was not operational due to Electrical malfunction.
4. Plant has 04 Coarse Bar Screens. All found operational.
5. Plant has 04 Fine Bar Screens. All found operational.
6. Out of 03 Grit Chambers, 02 were found operational and 01 is under rehabiliation.
7. Plant has 04 Primary Settling Tanks (PST). 03 PSTs has been rehabilitated and were found operational. 01 PST is under rehabilitation.
8. Plant has 04 Secondary Settling Tanks (SST). 03 SSTs has been rehabilitated and were found operational. 01 SST is under rehabilitation.
9. There are 04 Aeration tanks out of which only 02 are rehabilitated and in operation and rest 02 are under rehabilitation.
10. Sludge from PST and SST is directly being transferred to Sludge Drying Beds as Sludge Thickener has not been commissioned yet. 02 Additional Sludge Thickeners are under rehabilitation which were earlier used as DAF units in Old Plant.
11. Status of Sludge Units, Electricity Generation and Tertiary treatment units are as follows:

Name of Unit	Operational Condition
Bed Filter Press	Installed but not commissioned
Disc Filter	Under construction
UV Treatment Unit	Under construction
Sludge Digester	Total 04- 02 Rehabilitated & under Testing and 02 under Rehab.
Gas Holder	Total 02- 01 Rehabilitated & under Testing and 01 under Rehab.
Electricity Generation Units	Total 03- 01 ready to use but not in operation as supporting units are under construction/ Rehab and 02 Units are Rehab.

12. OLMS at the Outlet was found installed.

Ashish Uniyal
JEE, WMC-II

Abhishek Sharma
TE, WMC-II

Annexure - 1
(Inspection Report)

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	09-10-2023
Station Name:	KONDLI PH-1 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	55	40	40.1
2	BOD (in mg/L)	Multi	7.6	5	5.5
3	TSS (in mg/L)	Multi	10.42	8	8.2
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	29.45	31	31.4
5	AMMONIA	LINEAR	6.61	5	4.16
6	PH	LINEAR	7.59	7.5	7.52

Calibration by: ASHISH & FOZIA	Checked by :ASHIM DATTA	

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	09-10-2023
Station Name:	KONDLI PH-3 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	50.9	40	40.3
2	BOD (in mg/L)	Multi	9.7	6	5.6
3	TSS (in mg/L)	Multi	12.1	8	8.7
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	26.75	28	28.2
5	AMMONIA	LINEAR	8.38	4	4.11
6	PH	LINEAR	7.59	7.5	7.52

Calibration by: ASHISH & FOZIA

Checked by : ASHIM DATTA

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	09-10-2023
Station Name	KONDLI PH-4 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	54.6	46	46.1
2	BOD (in mg/L)	Multi	13.4	10	9.9
3	TSS (in mg/L)	Multi	25.8	21	19.5
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	26.9	30	30.4
5	AMMONIA	LINEAR	6.47	5	5.76
6	PH	LINEAR	7.6	7.5	7.52

Calibration by: ASHISH & FOZIA

Checked by : ASHIM DATTA

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	30-11-2023
Station Name:	KONDLI PH-1 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	38.2	30	28.53
2	BOD (in mg/L)	Multi	7.1	5	4.96
3	TSS (in mg/L)	Multi	11.56	8	7.76
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	20.45	23	23.5
5	AMMONIA	LINEAR	8.12	5	5.59
6	PH	LINEAR	7.6	7.5	7.52

Calibration by: ASHISH & FOZIA	Checked by : ASHIM DATTA	AAXIS NANO TECHNOLOGIES PVT. LTD. NOIDA U.P. DELHI-NCR

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	27-11-2023
Station Name:	KONDLI PH-3 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	47.8	33	32.8
2	BOD (in mg/L)	Multi	7.7	6	6.4
3	TSS (in mg/L)	Multi	11.2	8	7.6
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	22.9	21	21.6
5	AMMONIA	LINEAR	6.3	5	5.1
6	PH	LINEAR	7.44	7.5	7.51

Calibration by: ASHISH & FOZIA

Checked by : ASHIM DATTA

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	27-11-2023
Station Name	KONDLI PH-4 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	56.1	43	43.5
2	BOD (in mg/L)	Multi	13.7	11	11.6
3	TSS (in mg/L)	Multi	25.7	20	21.4
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	18.1	23	23.6
5	AMMONIA	LINEAR	8.88	7	7.06
6	PH	LINEAR	7.44	7.49	7.5

Calibration by: ASHISH & FOZIA	Checked by : ASHIM DATTA	AAXIS NANO TECHNOLOGIES PVT. LTD. NOIDA U.P. DELHI-NCR

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	20-12-2023
Station Name:	KONDLI PH-1 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	34.36	30	28.92
2	BOD (in mg/L)	Multi	6.96	5	4.16
3	TSS (in mg/L)	Multi	8.34	7	6.42
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	18.92	20	20.7
5	AMMONIA	LINEAR	3.98	5	4.55
6	PH	LINEAR	7.37	7.45	7.44

Calibration by: ASHISH & FOZIA

Checked by : ASHIM DATTA

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	20-12-2023
Station Name:	KONDLI PH-3 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	40.43	37	36.5
2	BOD (in mg/L)	Multi	12.9	6	6.95
3	TSS (in mg/L)	Multi	12.77	8	8.62
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	19	18	18.25
5	AMMONIA	LINEAR	6.11	4	4.44
6	PH	LINEAR	7.46	7.48	7.49

Calibration by: ASHISH & FOZIA	Checked by : ASHIM DATTA	

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CALIBRATION REPORT

Project Name:	DJB_EQMS	Date:	20-12-2023
Station Name	KONDLI PH-4 STP	Engineer:	RAGHVENDRA
		Manager:	Dharmendra Singh

S.No.	Parameters Name	Calibration Type	Online Result Precalibration	Lab Sample Calibration Point	Online Result Post Calibration
spectro::lyser (Calibration Method : multi point sample calibration w.r.t. laboratory analysis)					
1	COD (in mg/L)	Multi	52	45	45.9
2	BOD (in mg/L)	Multi	13.5	11	11.8
3	TSS (in mg/L)	Multi	25.4	22	22.9
ammo::lyser 1 (Calibration Method : sample calibration w.r.t. laboratory analysis/pH - buffers)					
4	TEMP	Global	18.9	21	20.8
5	AMMONIA	LINEAR	12.27	9	9.8
6	PH	LINEAR	7.35	7.5	7.52

Calibration by: ASHISH & FOZIA

Checked by : ASHIM DATTA

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ANNEXURE-5

By Speed Post/ Email

DELHI POLLUTION CONTROL COMMITTEE
DEPARTMENT OF ENVIRONMENT, GOVT. OF NCT OF DELHI
5th FLOOR, ISBT BUILDING, KASHMERE GATE, DELHI-110006
visit us at : http://dpcc.delhigovt.nic.in

F. No. DPCC/(13)(9)(0073)/PLG-13/ 53-56 **Dated: 11.01.2024**

To,

The Member Drainage,
Delhi Jal Board, Varunalaya Phase- II,
Jhandewalan, Karol Bagh, Delhi-110005.

Subject: Directions u/s 33(A) of Water (Prevention and Control of Pollution) Act, 1974, as amended to date for proper operation of STPs at Kondli to meet the Prescribed Standards including stoppage of by-passing of untreated sewage by DJB.

Whereas, Central Pollution Control Board is the State Board for all the Union Territories to exercise powers and performs functions under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, as amended to date.

And whereas, Central Pollution Control Board has delegated all its powers and functions under the Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974, as amended to date, in respect of Union Territory of Delhi to Delhi Pollution Control Committee (DPCC) vide Notification Dated 15.03.1991.

And whereas, as per Section 24 of the Water (Prevention and Control of Pollution) Act, 1974:

(a) No person shall knowingly cause or permit any poisonous, noxious or polluting matter determined in accordance with such standards as may be laid down by the State Board to enter (whether directly or indirectly) into any [stream or well or sewer or on land]; or

(b) No person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or of its consequences.

And whereas, **Delhi Jal Board, having its Head Offfice at Varunalaya Phase-II, Jhandewalan, KarolBagh, Delhi-110005** is responsible for operation and maintanance of the Sewage Treatments Plants in Delhi including STPs at Kondli, Delhi.

And Whereas, the Hon'ble National Green Tribunal has passed various orders including orders dated 29.05.2023 in OA No 366/2023 in the matter of Rajesh Kumar Dokwal Vs. Govt. of NCT of Delhi passed the following order

"It appears that despite the above two orders passed in OA Nos. 882/2018 and 429/2019 (supra), no effective compliance has been done. In these circumstances, we direct DJB and DPCC to submit a factual and action taken Report in the matter, particularly, in the light of the orders already passed in OA Nos. 882/2018 and 429/2019 (supra). If no effective action has been taken, they shall also explain as to why effective compliance of the earlier orders has not been carried out till date."

And whereas, inspection of the 10 MGD STP Phase-I, 25 MGD STP Phase-II, 10 MGD STP Phase-III & 45 MGD STP Phase-IV at Kondli was carried out by the officials of DPCC on **04.07.2023** and Delhi Pollution Control Committee had issued Directions u/s 33(A) of Water (Prevention and Control of Pollution) Act, 1974 and u/s 31(A) of Air (Prevention and Control of Pollution) Act, 1981, on 27.07.2023 to Delhi Jal Board for proper operation of STPs at Kondli to meet the Prescribed Standards including stoppage of by-passing of untreated sewage by DJB and to explain non-effective compliance of Directions of Hon'ble National Green Tribunal in Orders dated 28.05.2019 passed in OA No. 882/2018 "Jagdish Singh Vs. Govt. of NCT of Delhi" and Order dated 12.11.2021 passed in OA No. 429/2019 "RWA Society Vs. Govt. of NCT of Delhi".

And Whereas, Delhi Jal Board vide letter dated 03.08.2023 submitted reply with respect to said Directions issued by DPCC on 27.07.2023 and the same has been considered.

And whereas, inspection of the 10 MGD STP Phase-I, 25 MGD STP Phase-II, 10 MGD STP Phase-III & 45 MGD STP Phase-IV at Kondli was carried out by the officials of DPCC on **03.01.2024**. During the said inspection following deficiencies were observed:

1. Kondli STP Phase-IV has total capacity of 45 MGD. However, half of the capacity i.e. (22.5 MGD) is being treated only and rest 22.5 MGD is being by-passed as the plant is under rehabilitation.
2. Only 01 out of 03 Odour Control Units (OCU) found operational at the time of inspection.
3. Rapid Gravity Filter (RGF) (for phase II & III) were found non-operational at the time of Inspection.
4. No OLMS found installed at Phase-II.
5. Chlorination is not being carried out in Phase-II & III.
6. Sludge Handling Units of all 04 Phases has not been commissioned yet.

And whereas, as per the Analysis Reports dated 04.12.2023 (Samples collected on 09.11.2023) and as per the Analysis Reports dated 5.01.2024 (Samples collected on 13.12.2023) of DPCC laboratory , Kondli Phase – IV STP is not meeting the prescribed standards w.r.t. TSS (30 mg/l against the prescribed standard of 10 mg/l), BOD (16 mg/l against the prescribed standard of 10 mg/l) and COD (88 mg/l against the prescribed standard of 50 mg/l) .

Now therefore, in view of the above and as decided by the Competent Authority in DPCC in exercise of powers conferred upon it u/s 33(A) of the Water (Prevention and Control of Pollution) Act, 1974, **Member Drainage, Delhi Jal Board** is hereby directed to take immediate steps for rectification of deficiencies/ violations observed and mentioned above and to meet the standards prescribed by Delhi Pollution Control Committee and to ensure that there will be no by-passing of the raw/ untreated sewage from the above mentioned 45 MGD STP at Kondli. DJB shall submit the compliance report within 15 days from the date of issue of this Letter.

(22)

In case of failure to submit compliance of the above directions within 15 days from the date of issue of this letter, necessary action will be initiated as per law , without any further reference in this regard.

This issues with the approval of the Chairman, Delhi Pollution Control Committee.

(Dr. K. S. Jayachandran)
Member Secretary, DPCC

Copy to:-

1. The Chief Executive Officer, Delhi Jal Board, VarunalayaPh-II, Jhandewalan, Karol Bagh, Delhi-110005.
2. District Magistrate (East), L.M. Bund, Shastri Nagar, Delhi-31
3. PA to Chairman, DPCC

(Dr. K. S. Jayachandran)
Member Secretary, DPCC

ANNEXURE-6

URGENT
By Email

DELHI POLLUTION CONTROL COMMITTEE
DEPARTMENT OF ENVIRONMENT, GOVT. OF NCT OF DELHI
5th FLOOR, ISBT BUILDING, KASHMERE GATE, DELHI-110006
visit us at : http://dpcc.delhigovt.nic.in

F. No. DPCC/WMC-II/OA 21 (Ashwani Yadav) / 2023 / 5747-5750 **Dated: 14.12.2023**

To,

Chief Executive Officer,
Delhi Jal Board, Varunalaya Phase-II, Jhandewalan,
Karol Bagh, New Delhi-110005.

Sub: Clarification Regarding Non-Inclusion of All the Prescribed Parameters including Total Nitrogen by DPCC for Upgradation of Sewage Treatment Plants (STPs) of Delhi Jal Board.

Reference: Letter dated 31.01.2020 (Copy enclosed), email dated 01.12.2023 of DPCC and letter dated 05.12.2023 of Delhi Jal Board regarding Compliance of Prescribed Standards by Sewage Treatment Plants of Delhi Jal Board.

Sir,

I am directed to mention that DPCC has prescribed following Standards for Sewage Treatment Plants of Delhi Jal Board as per the Directions of Central Pollution Control Board (CPCB) u/s 18 (1)(b) of the Water (Prevention and Control of Pollution) Act, 1974 vide letter dated 21.04.2015 and further clarified vide letter dated 27.04.2016 to specify stringent standards for STPs :

(i) pH - 6.5 - 9.0 (ii) TSS < 10 mg/l (iii) BOD < 10 mg/l (iv) COD < 50 mg/l
(v) Ammonical Nitrogen < 5mg/l (vi)Total Nitrogen (N-Total) < 10 mg/l
(vii) Phosphate (PO4 - P)< 2 mg/l (viii) Fecal Coliform(FC) (MPN/100ml) < 230

Vide letter dated 05.12.2023, DJB has informed regarding Five Output Parameters (BOD, TSS, Phosphorus, Pathogen & Ammonia) for upgradation of STPs in Package I, II & III [Pappankalan Phase-I, Nilothi Phase-I, Najafgarh, Keshopur Phase-II, Keshopur Phase-III, Rohini Sec-25, Narela, Coronation Pillar Phase I & II and Coronation Pillar Phase-III] against the above mentioned 8 Parameters prescribed by DPCC..

Similarly, DJB has also informed regarding Seven Output Parameters (BOD, COD, TSS, Phosphorus, Pathogen, Ammonia/ Ammonical Nitrogen and Total Nitrogen) for upgradation of Kondli Ph-IV, Yamuna Vihar Ph-II and Rithala Ph-I against the above mentioned 8 Parameters prescribed by DPCC.

Table showing parameters prescribed by DPCC and Output Parameters for various STPs of DJB for Upgradation is enclosed.

In view of the above, it is requested to clarify as to why all the 8 Parameters including Total Nitrogen prescribed by DPCC have not been considered by DJB for upgradation of STPs including STPs in Package I, II & III, urgently by 15.12.2023. Also it is further requested to forward the tender documents and work contract of the aforesaid STPs to this office so that the parameters used by the DJB in the procurements concerned can be verified.

Yours Sincerely,

Enclosures: As Above

(Dr. K. S. Jayachandran)
Member Secretary, DPCC

Copy to:

1. Staff Officer to Chief Secretary, GNCTD, 5th Level, Delhi Secretariat, I.P. Estate, Delhi – 110002.
2. PS to Chairman, DPCC.
3. PS to Pr. Secy (Env.), Govt. of NCT of Delhi.

(Dr. K. S. Jayachandran)
Member Secretary, DPCC

Comparison between parameters prescribed by DPCC, Hon'ble NGT & Output Parameters for various STPs of DJB for Upgradation

S. No.	Parameters & Standards Prescribed by DPCC		Parameters & Standards Mentioned in NGT order Dated 30.04.2019 for Mega and Metropolitan Cities		Parameters & Standards for STPs in Package I, II & III (As per DJB)		Parameters & Standards for Kondli Phase-IV & Yamuna Vihar Phase –II & Rithala Phase - I		Parameters & Standards for Rithala Phase - I	
	Parameters	Standards	Parameters	Standards	Parameters	Standards	Parameters	Standards	Parameters	Standards
1.	pH	6.5-9.0	pH	5.5-9.0	BOD	10 mg/l	BOD	10 mg/l	BOD	10 mg/l
2.	BOD	10 mg/l	BOD	10 mg/l	TSS	10 mg/l	COD	50 mg/l	COD	50 mg/l
3.	COD	50 mg/l	COD	50 mg/l	Phosphorus	1 mg/l	TSS	10 mg/l	TSS	10 mg/l
4.	TSS	10 mg/l	TSS	20 mg/l	Pathogen	230 mg/l	Phosphorus	1 mg/l	Phosphorus	2 mg/l
5.	NH_4N	5 mg/l	-	-	Ammonia	5 mg/l	Pathogen	230 mg/l	Pathogen	100 mg/l
6.	N-Total	10 mg/l	N-Total	10 mg/l	* pH, Total Nitrogen & COD is not mentioned in the table. ** Phosphorus is mentioned in place of PO_4-P, pathogen mentioned in place of Fecal coliform and Ammonia in place of Ammonical Nitrogen		Ammonia	5 mg/l	Ammonical Nitrogen	5 mg/l
7.	Fecal Coliform	230 MPN/ 100 ml	Fecal Coliform	230 MPN/ 100 ml			Total Nitrogen	10 mg/l	Total Nitrogen	10 mg/l
8.	Phosphate (PO_4-P)	2 mg/l	Phosphorus as total(for discharge into ponds, lakes	1 mg/l			* pH is not mentioned in the table. ** Phosphorus is mentioned in place of PO4-P ,pathogen mentioned in place of Fecal coliform and Ammonia in place of Ammonical Nitrogen		* pH is not mentioned in the table. ** Phosphorus is mentioned in place of PO4-P and pathogen mentioned in place of Fecal coliform	

ANNEXURE-7

28

DELHI JAL BOARD :GOVT. OF DELHI
OFFICE OF CHIEF ENGINEER(SDW)
6TH FLOOR, VARUNALAYA PH-II
JHANDEWALAN, ND-110005

F No/DJB/CE(SDW)/2023/565 **DATE: 18.12.2023**

To

Member(Secretary), DPCC
DPCC, 5th Floor, ISBT Building
Kashmere Gat e, New Delhi-110006

Sub: Clarification Regarding Non-inclusion of all the prescribed parameters including total nitrogen by DPCC for upgradation of sewage treatment plants of Delhi Jal Board.

Sir,

This is in reference to E-mail dated 14.12.2023 on the subject cited above, in this connection it is certified that after upgradation of all the three packages, all 8 nos. of parameters prescribed by DPCC shall be maintain as follows:

S.N	KPI	Target
1	pH	6.5-9.0
2	BOD	≤10mg/l
3	COD	≤50mg/l
4	TSS	≤10mg/l
5	NH_4N	≤5mg/l
6	N-Total	≤10mg/l
7	Fecal coliform	230MPN
8	Phosphate (PO_4-P)	≤1mg/l

In support of above, photocopies of the Basic Engineering Package consisting of process, Design, Layout and hydraulic flow diagram duly vetted by Sh. A.K. Haritash, Professor, department of environmental engineering Delhi Technological University (formerly Delhi collage of Engineering) is attached herewith for reference as Annexure 'A'.

It is further certified that the parameters after upgradation of Kondli Ph-IV, Yamuna Vihar Ph-II shall be as under:

S.N	KPI	Target
1	pH	6.5-9.0
2	BOD	≤10mg/l
3	COD	≤50mg/l
4	TSS	≤10mg/l
5	NH_4N	≤5mg/l
6	N-Total	≤10mg/l
7	Fecal coliform	≤100MPN
8	Phosphate (PO_4-P)	≤1mg/l

It is further certified that the parameters after upgradation of Rithala Ph-I shall be as under:

S.N	KPI	Target
1	pH	6.5-9.0
2	BOD	≤10mg/l
3	COD	≤50mg/l
4	TSS	≤10mg/l

28

5	NH_4N	≤5mg/l
6	N-Total	≤10mg/l
7	Fecal coliform	≤100MPN
8	Phosphate (PO_4-P)	≤2mg/l

Further photocopies of the design basis and plant process description as per CA provision for Kondli Ph-IV, Yamuna Vihar Ph-II and Rithala Ph-I are attached herewith for reference please.

In view of the above, it is clarified that all 8 Nos. of parameter for treated effluent prescribed by DPCC shall be maintained after up-gradation of STP including STP contained in Package- I, II & III.

Thanking you.

With regards

Sd/-
(Bhupesh Kumar)
CE(SDW)

Copy for information to:

1. CEO, DJB
2. Member(Dr)

CE(SDW)

CHAPTER – II
TREATMENT DESIGN

2.1 PLANT DESIGN CRITERIA

It has been proposed to renovate and upgrade the existing 20MGD STP to 30 MGD with the addition/renovation of structures for increasing its removal efficiency with respect to BOD, COD, TSS, Faecal coliforms etc. as well for achieving nutrients removal i.e. phosphorus removal, nitrogen removal through nitrification, de-nitrification and process up-gradation followed by Tertiary Treatment with disc filtration then UV disinfection so as to achieve the treated waste water parameters prescribed by CPCB/DPCC.

Item/ Parameter/ Description	**Units**	
Treatment Process		IFAS
Existing STP Capacity	MGD	20
Design Average Flow (Upgraded flow)	MGD	30
Peak flow to STP	MGD	40
Influent Wastewater Characteristics		Asper adendum-5
pH	-	6.0 - 8.5
BOD	mg/L	250
COD	mg/L	550
TSS	mg/L	450
NH4-Nitrogen	mg/L	35
TKN, mg/ L	Mg/L	45
TP as PO4, mg/ L	mg/L	6
Total Coliform	MPN/100 mL	1.0×10^6
Min. Sewage Temperature (T min)	°C	18
Max. Sewage Temperature (T max)	°C	35
Min. Ambient Temperature	°C	15
Max. Ambient Temperature	°C	45
Treated Effluent Quality Requirements (at outlet of disinfected Channel)		
pH - instantaneous range		6.5 - 9.0
BOD5 at 20^0C	mg/L	≤10
COD	mg/L	≤50
TSS	mg/L	10
NH4-N	mg/L	≤5
TKN	mg/L	10
PO4-P (TP)	mg/L	≤1
Fecal Coliform	MPN/100mL	< 230

For SIPL Dwarka Water Systems Pvt. Ltd.

Authorised Signatory

EUROTECK ENVIRONMENTAL PVT.

SIPL- DWARAKA WATER SYSTEMS PRIVATE LIMITED

A. K. HARITASH
Professor
Department of Environmental Engineering
Delhi Technological University
Shahbad Daulatpur, Delhi-42

DELHI JAL BOARD

PKG-II

PROJECT TITLE

REHABILITATION/ UP-GRADATION OF 20 MGD SEWAGE TREATMENT PLANT AT KESHOPUR PHASE II, DELHI.

2.1 PLANT DESIGN CRITERIA

It has been proposed to renovate and upgrade the existing 20 MGD STP with the addition/renovation of structures for its hydraulic load and removal efficiency with respect to BOD, COD, TSS, Faecal coliforms etc. as well for achieving nutrients removal i.e. phosphorus removal, nitrogen removal through nitrification, de-nitrification and process up-gradation followed by Tertiary Treatment with disc filtration then UV disinfection so as to achieve the treated waste water parameters prescribed by CPCB/DPCC.

Item/ Parameter/ Description	**Units**	
Treatment Process		IFAS
Existing STP Capacity	MGD	20
Design Average Flow (Upgraded flow)	MGD	20
Design Peak flow to STP	MGD	40
Influent Wastewater Characteristics		
pH.	-	6.0 - 8.5
BOD	mg/L	250
COD	mg/L	550
TSS	mg/L	450
NH4-Nitrogen	mg/L	30
TKN, mg/ L (assumed)	Mg/L	35
TP as PO4, mg/ L	mg/L	6
Total Coliform	MPN/100 mL	1.0×10^6
Min. Sewage Temperature (T min)	°C	18
Max. Sewage Temperature (T max)	°C	35
Min. Ambient Temperature	°C	15
Max. Ambient Temperature	°C	45
Treated Effluent Quality Requirements (at outlet of disinfected Channel)		
pH - instantaneous range		6.5 - 9.0
BOD5 at 20°C	mg/L	≤10
COD	mg/L	≤50
TSS	mg/L	10
NH4-N	mg/L	≤5
TKN	mg/L	10
PO4-P (TP)	mg/L	≤1
Fecal Coliform	MPN/100mL	< 230

SUNIL DIXIT
Executive Engineer (SDW) VI
DELHI JAL BOARD
WSTP Keshopur, New Delhi-18

A. K. HARITASH

Pkg-III

PROJECT TITLE

REHABILITATION/ UP-GRADATION OF 10 MGD TO 15 MGD SEWAGE TREATMENT PLANT AT NARELA, DELHI.

2.1 PLANT DESIGN CRITERIA

It has been proposed to renovate and upgrade the existing 10 MGD STP to 15 MGD with the addition/renovation of structures for increasing its hydraulic load and removal efficiency with respect to BOD, COD, TSS, Faecal coliforms etc. as well for achieving nutrients removal i.e. phosphorus removal, nitrogen removal through nitrification, de-nitrification and process up-gradation followed by Tertiary Treatment with disc filtration then UV disinfection so as to achieve the treated waste water parameters prescribed by CPCB/DPCC.

Item/ Parameter/ Description	Units	
Treatment Process		IFAS
Existing STP Capacity	MGD	10
Design Average Flow (Upgraded flow)	MGD	15
Peak flow to STP	MGD	20
Influent Wastewater Characteristics		
pH	-	6.5 – 9.0
BOD	mg/L	300
COD	mg/L	550
TSS	mg/L	450
NH4-Nitrogen	mg/L	30
TKN, mg/ L	Mg/L	38
TP as PO4, mg/ L	mg/L	6
Total Coliform	MPN/100 mL	1.0×10^6
Min. Sewage Temperature (T min)	°C	18
Max. Sewage Temperature (T max)	°C	35
Min. Ambient Temperature	°C	15
Max. Ambient Temperature	°C	45
Treated Effluent Quality Requirements (at outlet of disinfected Channel)		
pH - instantaneous range		6 - 9.0
BOD5 at 20°C	mg/L	≤10
COD	mg/L	≤50
TSS	mg/L	10
NH4-N	mg/L	≤5
TKN	mg/L	10
PO4-P (TP)	mg/L,	
Fecal Coliform	MPN/100ml	230

DELHI JAL BOARD
Code 1 Recommended for approval for construction
Code 2 Recommended for approval with comments
Code 3 Recommended for rejection for approval
Code 4 Recommended for approval at .....
Code 5 Rejected
Approval status: Drawing Approved under code
SE (SDW) II EE (SDW) XII AE (E&M) JE (E&M)

DINESHCHANDRA ROHINI PROJECTS PRIVATE LIMITED

DELHI JAL BOARD

A. K. HARITASH
Professor
Department of Environmental Engineering
Delhi Technological University
Bawana Road, Shahbad Daulatpur, Delhi-42

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PROJECT TITLE

BILITATION / UP-GRADATION OF 15 MGD TO 25 MGD SEWAGE TREATM
PLANT AT ROHINI, DELHI.

1.3.2	**Treated effluent Sewage Characteristics-secondary treatment**			
	pH	=	6.5 to 9.0	
	BOD5, mg/ L	=	10.00	
	COD, mg/ L	=	50.00	
	TSS, mg/ L	=	20.00	
	Coliform , MPN/100ml	=	100000.00	
	Total Nitrogen, mg/ L	=	10.00	
	NH_4- Nitrogen, mg/ L	=	5.00	
	TP as P,mg/ L (As PO4-P)	=	1.00	
1.3.3	**Treated effluent Sewage Characteristics-Tertiary treatment**			
	pH	=	6.5 to 9.0	
	BOD5, mg/ L	=	10.00	
	COD, mg/ L	=	50.00	
	TSS, mg/ L	=	10.00	
	Coliform , MPN/100ml	=	230.00	
	Total Nitrogen, mg/ L	=	10.00	
	NH_4- Nitrogen, mg/ L	=	5.00	
	TP as P,mg/ L (As PO4-P)	=	1.00	
1.4.0	**Flow Rates**			
1.4.1	**Peak Flow for design**			
	m3/ day		386200.00	
	m3/ Hr		5675.00	

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Code 1 Recommended for approval for cor
Code 2 Recommended for approval with c
(for construction subject to incorporation
Code 4 Recommended for approval

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Influent Sewage Characteristics	Value
pH	6-8.5
BOD, mg/ L	250-300
COD, mg/ L	425-600
TSS, mg/ L	400-550
Faecal coliform, MPN/100ml	$12x10^{06}$
Temperature, °C	26 (Design shall be suitable for all temperature)
NH_4- Nitrogen, mg/ L	45
TP as PO4, mg/ L	8
Oil & Grease mg/l	35

The above data is based on wastewater quality analyzed by DJB. However, the contractor may conduct the sampling and tests of raw sewage by himself to ascertain the raw sewage quality for treatment process. The Employer (Delhi Jal Board) will not be responsible for the above and no relaxation will be given to the guarantee conditions of desired treated effluent quality. For design purposes, values higher of the two i.e. as given above or as per test got conducted by the contractor shall be considered.

1.6 Treated Effluent & Residual Guarantees

1.6.1 Treated Effluent Quality Requirement & Guarantee

The contractor shall design the process in such a way that the treated effluent qualities meet the following minimum standards or even better after secondary & tertiary treatment and disinfection

S No	Particulars	To be Guaranteed by Bidder
1	pH	6.5-8.0
2	TSS	≤ 10 mg/lt
3	Total Nitrogen	≤ 10 mg/l
4	Ammonical Nitrogen (NH_4-N)	≤ 5 mg/lt
5	BOD_5	≤ 10 mg/lt
6	COD	≤ 50 mg/lt
7	PO_4-P (TP)	≤ 1 mg/lt

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8	Fecal Coliform	< 100 MPN/100ml

The contractor is to maintain guarantee parameters for treated effluent quality, as listed above, during defect liability period and O&M period.

Demonstration of the treated effluent quality parameters measurement incident, sampling, analyzing in laboratory and liquidated damages/penalty for non-conformance etc. have been mentioned in Volume-II, Part-9 Service Level Agreement.

1.6.2 Sludge Quality Standard

- Solids content in wet cake of at least 20 % (+/-) 2% w/w
- Ratio of TVSS/TSS shall be 48 % or less

The penalty for each residual noncompliance "incident" as indicated in Volume-II, Part-9 Service Level Agreement shall be adopted for residual quality guarantee.

1.7 Brief Scope of Work:

The brief scope of work comprises of the following major heads:

1) Interim Operation of the existing & partly rehabilitated WWTP during construction & rehabilitation period.
2) Construction, Rehabilitation and up-gradation of existing WWTP.
3) Integration of rehabilitated WWTP & Trial Run.
4) Operation of Plant during Defect Liability Period of two year.
5) Operation & Maintenance of the plant for a period of 10 years after successful completion of DLP.
6) Demolition of structures of existing WWTP, if any.

The Duration of the work execution shall be as follows:

Sl. No.	Description	Period
a)	Construction, rehabilitation & up-gradation period along with integration of rehabilitated plant	12 months
b)	Trial run	3 months
c)	Defect Liability Period (DLP)	24 months after successful completion of Trial run.
d)	O&M period	120 months (10 years) after successful completion of DLP

1) Interim Operation of the existing & partly rehabilitated WWTP during construction

Item/ Parameter/ Description	Units	15MGD YAMUNA VIHAR
pH - instantaneous range		6.5 - 9.0
BOD5 at 20°C	mg/L	≤10
COD	mg/L	≤50
TSS	mg/L	10
NH4-N	mg/L	≤5
Total N	mg/L	10
PO4-P (TP)	mg/L	≤1
Fecal Coliform - max monthly avg.	MPN/100mL	< 100
Treated Sludge Quality Requirements (Dewatered Sludge)		
Solids content in wet cake	w/w	at least 25 % (+/-) 2%
Ratio of TVSS/TSS shall be	%	48 % or less

Treated sludge disposal

The generation of sludge from the STP i.e digested sludge is de-watered in Belt Filter Press aided by the polyelectrolyte dosing and the wet cake is disposed off to the sludge dumping site identified by DJB.

Chemical requirements

Dewatering polyelectrolyte dosing tanks fitted with an agitator facilitates the Preparation of 0.20 % solution. DWPE dosing pumps are provided to dose the polyelectrolyte solution to centrifuges to improve the dewatering characteristics of the digested sludge. The dosing rate of the DWPE solution is varied by the manual stroke adjustment of the dosing pumps.

Tertiary Treatment

After the Biological Treatment the overflow of Secondary clarifier would be fed to the Disc Cloth Filter for filtration followed which the treated water would be dis-infected with UV System.

Dis-Infection

The area available for constructing Chlorine contact has lot of old trees and plantations hence cutting of large amount of tress would become inevitable. SO it has been proposed to dis-infect the tertiary treated water with UV System.

Table 2. *Incoming Wastewater Quality*

Sl. No.	PARTICULARS	UNITS	RAW WASTEWATER			DESIGN VALUE
			AVG	MIN	MAX	
1	Air Temperature	C	25	5	48	**Min & Max**
2	Water	C	26.4	17.8	29.0	**Min & Max**
3	pH Value	-	7.20	7.054	7.38	**7.0 to 7.40**
4	Total Alkalinity	mg/l	350	279	415	**400**
5	Chlorides	mg/l	205	140	292	**250**
6	TSS	mg/l	275	205	330	**400**
7	VSS	mg/l	170	115	247	**240**
8	BOD	mg/l	175	100	212	**225**
9	COD	mg/l	426	300	515	**450**
10	Ammonia-N	mg/l	33	18	48	**42**
11	TKN	mg/l	46	29	55	**50**
12	Oil & Grease	mg/l	17.0	15.0	19.0	**20**
13	Total Phosphorus	mg/l	5	3.2	5.7	**6.0**

4.5 TREATED EFFLUENT QUALITY REQUIREMENTS

The treated effluent qualities shall meet the following minimum standards or even better after treatment and disinfection-

Table 3. *Treated effluent quality requirement and Guarantee*

Sl. No.	PARTICULARS	TO BE GUARANTEED
1	pH	6.5-9.0
2	TSS	≤ 10 mg/l
3	Total Nitrogen	≤ 10 mg/l
4	Ammoniacal Nitrogen (NH_4-N)	≤ 5 mg/l

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Sl. No.	PARTICULARS	TO BE GUARANTEED
5	BOD	≤ 10 mg/l
6	COD	≤ 50 mg/l
7	PO_4-P (TP)	≤ 2 mg/l
8	Faecal Coliform	< 100 MPN/100ml

4.6 SLUDGE QUALITY STANDARD

The sludge quality requirements to be met are listed below-

Sludge Quality requirements (Dewatered sludge)

PARAMETER	REQUIREMENT
Sludge Quality	Digested Stabilised Sludge
Minimum Sludge Consistency after Dewatering	25% (+/-) 2% w/w

The Dewatered Sludge should be truck-able and be suitable for disposal by open body truck.

4.7 UTILISATION OF BIOGAS FROM THE PROPOSED PLANT

Bio-gas generated from the proposed plant shall be taken for power generation by Biogas engine.

4.8 TREATED WATER DISPOSAL

The treated water shall be disposed-off to the existing Nangloi supplementary drain as per the specification in tender. Outfall structure shall be of RCC.

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