BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH AT NEW DELHI
O.A NO. 1002/2018

IN THE MATTER OF:
Abhisht Kusum Gupta …Applicant

Versus

State of Uttar Pradesh & Ors. …Respondents

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Through

Adarsh Tripathi & Ajitesh Garg
Advocates for the Respondent No.12 (NTPC Ltd.)
G-34, Basement, Lajpat Nagr-3, New Delhi-110024
M: 9090416535 | adarsht912003@gmail.com

Date: 11.03.2025
Place: New Delhi

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH AT NEW DELHI
O.A NO. 100

IN THE MATTER OF:
Abhishit Kusum Gupta

Versus

Applicant

State of Uttar Pradesh & Ors.

Respondents

AFFIDAVIT ON BEHALF OF RESPONDENT NO.12 (NTPC LTD.) IN COMPLIANCE OF THE ORDER DATED 12.08.2024 PASSED BY THIS HON'BLE TRIBUNAL TO BRING ON RECORD ADDITIONAL INFORMATION AND DOCUMENTS.

I, Mohit Jain, S/o Sh. Jaumuni Kant Jain, aged about 44 years, currently serving as Deputy General Manager (P&S) at NTPC Limited, having its registered office at NTPC Bhawan, Core 7, Scope Complex, Institutional Area, Lodhi Road, New Delhi-110003, do hereby solemnly affirm and state as under:

1. That I am duly authorized to swear this affidavit on behalf of the Respondent No. 12, NTPC Limited, and am fully conversant with the facts of the present case as derived from the official records.

2. That the present matter pertains to the implementation of the Memorandum of Understanding (MoU) dated 14.06.2018 between the Answering Respondent No.12 and the Noida Authority for the supply of 80 MLD secondary treated sewage water for non-potable purposes at NCTPP Dadri. The Hon'ble Tribunal has sought compliance with the terms of the said MoU, requiring Answering Respondent to explore the feasibility of utilizing treated sewage water in accordance with the Ministry of Power's policy directives and tariff regulations.

07 MAR 2025

3. That the present affidavit is being filed in compliance with the directions contained in the Hon'ble Tribunal's order dated 12.08.2024, wherein Respondent No. 12 was directed to submit a feasibility report regarding the use of treated sewage water from the Noida STPs for non-potable purposes at NCTPP Dadri.

4. That in pursuance of the said directions, NTPC Limited initiated a transparent and competitive limited tendering process for the preparation of the feasibility report. The said tender process was conducted in an independent and fair manner, ensuring that the selected entity possessed the necessary technical expertise to conduct such a feasibility study. The true copy of the tender documents issued by the Respondent No.12 is attached herewith and marked as **Annexure A**.

5. That as an outcome of the said tender process, the work was awarded to L1 Bidder, M/s Puranik Brothers, a reputed consultancy firm, vide Letter of Intent dated 11.11.2024, after due scrutiny and evaluation of bids submitted in response to the tender (Tender ID: 2024_NTPC_91424_1). The true copy of the Letter of Intent dated 11.11.2024 is annexed herewith and marked as **Annexure B**.

6. That the preparation of the feasibility report was carried out independently by the appointed consultant, without any external influence, bias, or interference, ensuring transparency and impartiality. The true copy of the feasibility report dated 12.02.2025 is attached herewith and marked as **Annexure C**.

7. That the feasibility report so prepared, comprehensively examines the technical, financial, and environmental aspects of utilizing secondary treated sewage water at NCTPP Dadri.

NOTARY PRAMOD KUMAR SHARMA Advocate GHAZIABAD Regd. No.-3157 GOVT. OF INDIA

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07 MAR 2025

8. That the feasibility report provides a detailed assessment of various factors including:

a) The infrastructure requirements for the collection, conveyance, and treatment of the secondary treated sewage water.

b) The technical compatibility of the treated water with the existing systems at NCTPP Dadri.

c) The financial implications, including the estimated capital expenditure of Rs. 1398.41 Crore and levelized annual operational expenditure of Rs. 129.24 Crore.

d) The environmental considerations associated with the proposed project, including the reduction in potable water consumption and compliance with regulatory requirements.

9. That upon comprehensive analysis, the feasibility report concludes that while the use of treated STP water at NCTPP Dadri is theoretically possible, it is not ordinarily feasible due to significant infrastructural challenges, financial constraints, and operational risks. That the report highlights that the capital investment required is disproportionately high in comparison to the potential benefits, and the operational expenses would impose an undue financial burden on the Answering Respondent, making the project unsustainable in the long run, proving to the detriment of the ultimate beneficiaries/consumers at large.

10. That the technical challenges associated with the treatment and transportation of STP water, including but not limited to pipeline installation through densely populated urban areas, high energy consumption for pumping and compliance with stringent environmental regulations, render the project highly impractical. That the report further indicates that despite tertiary treatment, the quality of the treated water may still not meet the

NOTARY PRAMOD KUMAR SHARMA Advocate GHAZIABAD Regd. No.-3157 GOVT. OF INDIA

07 MAR 2025

stringent operational requirements of the power plant, thereby posing significant risks to plant operations and maintenance.

11. That the feasibility report further establishes that the required capital investment is so substantial that, given the remaining useful life of the plant, the costs incurred would either be irrecoverable or necessitate a steep increase in tariff rates. Such an increase would defeat the fundamental objective of the Answering Respondent as a Public Sector Undertaking to provide electricity at an affordable rate, thereby adversely impacting the interests of the general public and negating the very purpose of the initiative.

12. That the Respondent No. 12 has acted in compliance with the Hon'ble Tribunal's order dated 12.08.2024 and has placed on record all relevant information and supporting documents regarding the feasibility study undertaken.

13. That the Respondent No. 12 respectfully submits that the said feasibility report may be taken on record as part of the necessary compliance with the Hon'ble Tribunal's directives.

14. That the facts stated hereinabove are true and correct to the best of my knowledge, belief, and understanding based on records available.

NOTARY
PRAMOD KUMAR SHARMA
Advocate
GHAZIABAD
Regd. No.-3157
GOVT. OF INDIA

Mohitjain

DEPONENT

मोहित जैन
Mohit Jain
उप महाप्रबंधक (पी एण्ड एस)
Dy. General Manager (P&S)
एनटीपीसी लि०–दादरी / NTPC Ltd.-Dadri

VERIFICATION:

I, Mohit Jain, S/o Sh. Jaumuni Kant Jain, aged about 44 years, the deponent above-named, do hereby verify that the contents of this affidavit are true and

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correct to my knowledge and belief. No part of it is false and nothing material has been concealed therefrom.

Verified at Dadri, Gautam Budh Nagar, Uttar Pradesh on this 7th day of March 2025.

07 MAR 2025

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Mohit Jain

DEPONENT

मोहित जैन
Mohit Jain
उप महाप्रबंधक (पी एण्ड एस)
Dy. General Manager (P&S)
एनटीपीसी लि०-दादरी / NTPC Ltd.-Dadri

NOTARY
PRAMOD KUMAR SHARMA
Advocate
GHAZIABAD
Regd. No.-3157
GOVT. OF INDIA

ATTESTED
S. No. 01 Dated. 07.03.2025
Certified that Documents/Affidavit of Shri..
Identified by Shri.....

07.03.2025
PRAMOD KUMAR SHARMA
Regd. No. 3157, Govt. of India
Notary Public, Ghaziabad

Mohit Jain S/o Sh. Jaimunikant Jain, 24 yrs
D.G.M (P&S) at NTPC Ltd.
NTPC Bhawan Core 7, Scope Complex
Institutional Area. Lodhi Road
New Delhi.

07 MAR 2025

NTPC Tenders
A Maharatna Company

NTPC Limited eProcurement Portal

Tender Details

Date : 10-Mar-2025 05:22 PM

Print

Basic Details			
Organisation Chain	NTPC Limited||DBF Headquarter||National Capital Power Station, Dadri		
Tender Reference Number	NTPC/National Capital TPS/9900290102		
Tender ID	2024_NTPC_91424_1	**Withdrawal Allowed**	Yes
Tender Type	Limited	**Form of contract**	Service
Tender Category	Services	**No. of Covers**	1
General Technical Evaluation Allowed	Yes [Compliance Required]	**ItemWise Technical Evaluation Allowed**	No
Payment Mode	Not Applicable	**Is Multi Currency Allowed For BOQ**	No
Is Multi Currency Allowed For Fee	No	**Allow Two Stage Bidding**	No

Cover Details, No. Of Covers - 1			
Cover No	**Cover**	**Document Type**	**Description**
1	Fee/PreQual/Technical/Finance	.pdf	Scanned Fee Details
		.pdf	Technical Details
		.xls	Price Bid

Tender Fee Details, [Total Fee in ₹ * - 0.00]			
Tender Fee in ₹	0.00		
Fee Payable To	Nil	**Fee Payable At**	Nil
Tender Fee Exemption Allowed	No		

EMD Fee Details			
EMD Amount in ₹	0.00	**EMD Exemption Allowed**	No
EMD Fee Type	fixed	**EMD Percentage**	NA
EMD Payable To	Nil	**EMD Payable At**	Nil
BG Required	No		
Minimum Direct EMD Payment in ₹	0.00		

Click to view modification history

Work /Item(s)					
Title	Consultancy Contract for Project Feasibility Report for Use of Treated				
Work Description	As per tender documents				
Pre Qualification Details	NA				
Independent External Monitor/Remarks	NA				
Show Tender Value in Public Domain	Yes				
Tender Value in ₹	0.00	**Product Category**	Serv - Others	**Sub category**	NA
Contract Type	Tender	**Bid Validity(Days)**	120	**Period Of Work(Days)**	60
Location	Dadri Thermal Power Project P.O. VIDYUT NAGAR DADR	**Pincode**	201008	**Pre Bid Meeting Place**	NA
Pre Bid Meeting Address	NA	**Pre Bid Meeting Date**	NA	**Bid Opening Place**	Dadri Thermal Power Project

Should Allow NDA Tender	No	**Allow Preferential Bidder**	No

Critical Dates

Publish Date	21-Oct-2024 05:15 PM	**Bid Opening Date**	29-Oct-2024 11:30 AM
Document Download / Sale Start Date	21-Oct-2024 05:20 PM	**Document Download / Sale End Date**	28-Oct-2024 05:30 PM
Clarification Start Date	21-Oct-2024 05:25 PM	**Clarification End Date**	28-Oct-2024 12:00 PM
Bid Submission Start Date	21-Oct-2024 05:30 PM	**Bid Submission End Date**	28-Oct-2024 05:30 PM

Tender Documents

NIT Document

S.No	Document Name	Description	Document Size (in KB)
1	Tendernotice_1.pdf	NIT	128.62

Work Item Documents

S.No	Document Type	Document Name	Description	Document Size (in KB)
1	Tender Documents	ITB.pdf	Instruction to bidder	203.34
2	Tender Documents	SCC.pdf	Special conditions of contract	264.97
3	Tender Documents	AmendedOrderSCC.pdf	Amendment order in SCC	10059.81
4	Tender Documents	SafetyPolicy.pdf	Safety Policy	965.27
5	BOQ	BOQ_94621.xls	Bill of quantity	369.00
6	Tender Documents	SOW.pdf	Scope of work, terms and conditions	39.92
7	Tender Documents	FORMSANDPROCEDURES.pdf	Nil Deviation, Letter of Undertaking, Froud Prevention Policy and other Forms and procedures	257.88
8	Tender Documents	NIT.pdf	NIT	112.97

View GTE Details - SERVICE GTE (LT WITH LOU - LAND BORDER CLAUSE-NO DEVIATION)

S.No	Particulars	Expected Value	Mandatory
1.0	Do You accept Letter of Undertaking as per tender specific conditions	Yes	Yes
2.0	Do you accept the Fraud Prevention Policy of NTPC	Yes	Yes
3.0	Do you accept Withholding and Banning of Business Dealing Policy of NTPC	Yes	Yes
4.0	Do you certify full compliance on clause as per tender documents on Restrictions on procurement from a Bidder of a country which shares a land border with India	Yes	Yes
5.0	Do you certify full compliance to all provisions of Bid documents	Yes	Yes

Limited Bidders List

S.No.	Bidder Name	Bidder Login Id
1.	MANAVSEVA CONSULTANT	sanersharayu09@gmail.com
2.	Puranik Brothers	puranikbrothers@gmail.com
3.	SHYAM DESIGNERS AND CONSULTANTS PRIVATE LIMITED	shyamconsultantsindia@gmail.com
4.	YASH INNOVATIVE SOLUTIONS LLP	tenders@yashinnovative.com

Auto Extension Corrigendum Properties for Tender

Iteration	No. of bids required for bid opening a tender	Tender gets extended to No. of days
1.	1	4
2.	1	4
3.	1	4

Bid Openers List

S.No	Bid Opener Login Id	Bid Opener Name	Certificate Name
1.	sandeepkumar09@ntpc.co.in	Sandeep Kumar	SANDEEP KUMAR
2.	saurabhkumar02@ntpc.co.in	Saurabh Kumar	SAURABH KUMAR
3.	vijaysolanki@ntpc.co.in	Vijay Mohanlal Solanki	VIJAY MOHANLAL SOLANKI

GeMARPTS Details

Reason for non availability of GeMARPTS ID	Urgent nature of Procurement
Remarks	As per approval, GEM unavailability certificate
Document Name	GEMunavailability.pdf
Document Size (in KB)	411.24

Tender Properties

Auto Tendering Process allowed	No	**Show Technical bid status**	No
Show Finance bid status	Yes	**Stage to disclose Bid Details in Public Domain**	Technical Bid Opening
BoQ Comparative Chart model	Normal	**BoQ Compartive chart decimal places**	2
BoQ Comparative Chart Rank Type	L	**Form Based BoQ**	No

TIA Undertaking

S.No	Undertaking to Order	Tender complying with Order	Reason for non compliance of Order
1	PPP-MII Order 2017	Agree	As per tender document
2	MSEs Order 2012	Agree	As per tender document

Tender Inviting Authority

Name	Saurabh KumarAsst. Manager (CnM)
Address	Dadri Thermal Power Project P.O. VIDYUT NAGAR DADRI 201008

Tender Creator Details

Created By	Saurabh Kumar
Designation	Asst. Manager
Created Date	21-Oct-2024 12:19 PM

NTPC Limited

(A Government of India Enterprise)

National Capital Power Project

P.O. VIDYUT NAGAR
DADRI GAUTAM BUDH NAGAR(U.P.)
Uttar Pradesh- 201008, India
Telephone No. : Fax No. : 2672330

Service Purchase Order

PAN No. : AAACN0255D
CIN No. : L40101DL1975GOI007966

Purchase Order No. : 4600081493-003-1011 **Date :** 12.11.2024 **(version : 0)**

To

Puranik Brothers
New Ramdaspeth
P.No.110,"Bansiraj" Kachipura
Nagpur
Maharashtra
India - 440010
Tel: 07122521799
Fax: 07122551555
E-Mail : puranik_brothers@yahoo.co.in

Vendor Code : 1078159

Subject:	:	Consultancy Contract for preparation of Project Feasibility Report (PFR) for use of treated STP Water from Noida STPs in NCTPP Dadri
NIT NO.	:	Dated
Your Offer No.	:	
Your Reference	:	1. Tender ID: 2024_NTPC_91424_1 (NIT No.9900290102) 2. Your offer opened on 29.10.2024 & revised offered dated 04.11.2024
Our Reference	:	Letter of Intent Ref. No.08/CS/P&S/1111 dated 11.11.2024

Dear Sir,

This has reference to our above mentioned NIT, Your offer and subsequent discussions. We are pleased to accept your offer opened on and confirm having awarded on you the work of Consultancy Contract for preparation of Project Feasibility Report (PFR) for use of treated STP Water from Noida STPs in NCTPP Dadri of total value INR 1,420,250.00 (Rupee FOURTEEN LAKH TWENTY THOUSAND TWO HUNDRED FIFTY ONLY) mentioned in the scope of works, special terms & conditions, Bill of quantities etc.

The duration of the service period shall be from 15.11.2024 to 14.01.2025. Though the duration of contract shall remain same, the actual date of commencement of the contract shall be as per the direction of EIC. DGM (P&S) shall be EIC for this work.

This service purchase order along with its annexure is being issued to you in duplicate .We request you to return the duplicate copy of this service purchase order, duly signed on each page by your authorised signatory in token of your unequivocal acknowledgment of the same within 15 days from the date of this service purchase order. If no communication is received within 15 days of receipt of Purchase Order, it will be treated that order has been accepted in entirety.

We thank you for the interest shown by you in our project and the cooperation extended to us. We expect to receive your continued cooperation in future also.

Thanking You,
For & on behalf of NTPC Limited.

Sandeep Kumar
SENIOR MANAGER
8826756183

SANDEEPKUMAR09@NTPC.CO.IN

Enclosures :

CC: Puranik Brothers,
New Ramdaspeth
P.No.110,"Bansiraj" Kachipura
Nagpur,
Maharashtra- 440010
India
Tel: 07122521799

(Bill of Quantity)

Name of Work: Consultancy Contract for preparation of Project Feasibility Report (PFR) for use of treated STP Water from Noida STPs in NCTPP Dadri

Sl No.	Code	Description	Unit	Quantity	Net Price	Amount	Long Text

Delivery/Invoicing Address:

1011 National Capital Power Project
P.O. VIDYUT NAGAR DADRI GAUTAM BUDH NAGAR(U.P.)
Uttar Pradesh
201008
India

2672330
Invoicing to be done on
GST No. : 09AAACN0255D9ZO

10		Consultancy contract for PFR	AU	1.000	1,420,250.00	1,420,250.00	

Tax: IN:Integrated GST-ND @ 18.00 % **Extra**

10 .10		Consultancy contract for PFR	AU	1	1,495,000.0000	1,495,000.00	

TOTAL OF BOQ PART :	00010	INR 1495000.00
Discount (%)	5.00- %	74750.00-
Amount		**1420250.00**
Other Charges		0.00
Net Amount on BOQ PART :	00010	INR 1420250.00

Net Total Amount	INR 1,420,250.00
Less Rebate/Amount	INR 0.00
Grand Total	INR 1,420,250.00

INR FOURTEEN LAKH TWENTY THOUSAND TWO HUNDRED FIFTY ONLY

For & on behalf of NTPC Limited.
Sandeep Kumar
SENIOR MANAGER
8826756183
SANDEEPKUMAR09@NTPC.CO.IN

Terms & Conditions

Payment Terms

01. Terms of Payment: 100% payment shall be released after certification of EIC that the works have been performed in accordance with the Specifications:

The payment shall be released after approval of feasibility report.

Invoice to be raised on delivery/invoice address against the given PO line items.

02. Unless exempted by the Income Tax Officer, Income Tax shall be deducted from all your running account bills as per the Income Tax Act, 1961 and its applicable amendments.

03. GST as applicable shall be paid extra against submission of documentary evidence.

Invoice to be raised on delivery/invoice address against the given PO line items.

Security Deposit

Security deposit @ 5.00 % shall be deducted from running bills with a cieling of INR 71012.00 INR.

Liquidated Damages

@ 0.50 % per week or part there of for the portion of works executed beyond the agreed completion date subject to a maximum of 5.00 % PO value.

Special Instruction

01. The Engineer in charge for this work shall be DGM (P&S). The Engineer # in # Charge will act in all matters pertaining to this contract on behalf of NTPC.

02. Security deposit shall be released after completion of work.

03. Please submit non Judicial stamp paper of Rs. 100/- for agreement purchase in your company#s name from U.P. State.

04. SETTLEMENT OF DISPUTES AND ARBITRATION: -
It is specifically agreed by and between the parties that all the differences or disputes arising out of the contract or touching the subject matter of the contract shall be decided by process of settlement and arbitration as specified in clause 8.3 of General Conditions of Contract for O&M work and the provisions of the Arbitration and conciliation Act 1996 shall apply. G.B. Nagar alone shall have jurisdiction over the same the arbitrator shall give reasoned award.

05. The General Conditions of Contract O&M will also integral form part of the contract documents.

06. The date of start for this work shall be intimated by engineer-in-charge and the completion period shall be 02 Months.

07. Defect liability period is NIL.

08. 2% of the monthly RA bill will be held for specifying minimum % towards Amount linked to Safety Aspects/ compliance to Safety Rules.

For & on behalf of NTPC Limited.
Sandeep Kumar
SENIOR MANAGER
8826756183
SANDEEPKUMAR09@NTPC.CO.IN

For & on behalf of NTPC Limited.
Sandeep Kumar
SENIOR MANAGER
8826756183
SANDEEPKUMAR09@NTPC.CO.IN

Break up of Price (For Service Related Lines Only)

Sl No.	Service Code	Description	Qty.	UOM	Rate	Premium	Discount	Addl Discount	Net Rate	Value
10 .10		Consultancy contract for PFR	1	AU	1,495,000.00	0.00	0.00	0.00	1,495,000.0000	1,495,000.00

For & on behalf of NTPC Limited.
Sandeep Kumar
SENIOR MANAGER
8826756183
SANDEEPKUMAR09@NTPC.CO.IN

SCOPE OF WORK

00010 : Consultancy contract for PFR
SCOPE OF WORK, TERMS AND CONDITIONS

Name of Work: - Consultancy Service for Preparation of Project Feasibility Report for Use of Treated STP Water from Noida STP in NCTPP Dadri power Plant.

Major Scope of Work of Consultancy Service: - NCTPP Dadri intended to use secondary treated sewage water from Noida STPs (STP-123 & STP54) in NTPC Dadri Plant for non-potable purpose. NCTPP Dadri desires to prepare a Project Feasibility Report for use of treated STP Water in NCTPP Dadri Plant from Noida STPs. STP-123 & STP-54 are located at Sector 123 & Sector 54 of Noida respectively. NTPC Dadri plant is located at latitude and longitude of 280 36# 5" N & 770 36# 29" E respectively.

Major scope of work of Consultancy Service has been outlined below:
(i) Site assessment and carrying out route survey of pipeline routing from Noida STPs (STP-123 & STP-54) to NCTPP Dadri plant. Consultant shall physically survey the site.
(ii) Recommendation of preferred pipeline routing for conveying treated water from Noida STPs as mentioned above to NCTPP Dadri plant among various options highlighting all major constraints/ impendent in each route.
(iii) Preparation of Schematic diagrams of Pumping of secondary treated water from Noida STP (STP-123 & STP-54) to NCTPP Dadri plant.
(iv) Exploring all the required treatment facilities to be established at NCTPP Dadri plant end to treat 80 MLD Secondary treated sewage water to meet power plant water and ZLD quality requirements. Detailed study of quality of water to be done whether water can be used in plant or not after treatment.
(v) Assessment of major design parameter and sizing of treatment facility, pumping and piping system for use of treated water.
(vi) Preparation of major Bill of Quantities (BOQ) and assessment of capital and operating costs for the proposed infrastructure.
(vii) Preparation of cost estimates of total project including ROU/ ROW for laying of pipeline. Basis of costing shall be derived by the Consultant.
(viii) Comparative cost analysis and impact on tariff w.r.t use of treated STP water (Considering secondary treated water is supplied on chargeable basis and free of cost both) as compared to fresh water.
(ix) Estimation of the project implementation schedule for execution of complete project.
(x) Assessment of any other information/requirement related to Environment & Social Consideration for execution of complete project as normally desired by the guidelines of various State/ Govt. authorities.
(xi) Any other work required to complete the Project Feasibility Report shall be carried out by the Consultant.

Other terms & conditions:

1. All the work shall be carried out as per as per directions of Engineer-in-Charge.
2. Works should be completed in all respect, terms and conditions, specifically not mentioned in the scope shall be executed as a part of scope to complete the job within quoted price.
3. Submission of final report for review and acceptance from NTPC authorities.
4. The agency will submit final report in soft copy & 04 no. hard copies.
5. All expenses of travelling, boarding and lodging during execution of work will be in contractor scope.
6. Payment Terms: 100 % payment shall be released after certification of EIC that the works have been performed in accordance with the Specifications.
The payment shall be released after approval of feasibility report. Invoice to be raised on delivery/invoice address against the given PO line items.
7. Taking permission / NoC outside of NCTPP Dadri, if required for preparation of feasibility report, shall be in Consultant#s scope. However, NCTPP Dadri shall extend all possible support in this regard.

Completion period: 02 (Two) Months.

Date of start: Within 7 (Seven) day from issue of LOI/ LOA/ PO.

For & on behalf of NTPC Limited.
Sandeep Kumar
SENIOR MANAGER
8826756183
SANDEEPKUMAR09@NTPC.CO.IN

The agency shall have to submit an agreement as per NTPC format within 14 days from the date of award of contract. No payment shall be released before submission of the said agreement.

Defect liability period: Nil.

TAXES, DUTIES AND LEVIES:
The provisions of taxes, duties and levies shall be as per standard Govt norms. GST- Extra as applicable.

Safety Norms:
NTPC Limited corporate safety norms/ conditions must be adhered to. In case of any accidents during work, the contractor has to arrange the requisite treatment at his own cost. All the Personal Protective Safety services are to be provided by the contractor at his own cost. Necessary civil, electrical and mechanical safety rules shall have to be strictly followed during the execution of work.

SPECIAL INSTRUCTION
Time is the essence of the contract, the work shall be executed as per instruction of EIC. Terms and conditions specifically not mentioned in the scope shall be executed as a part of scope to complete the job. All other tools, plants, machinery and services required for successful completion of work shall be arranged by contractor.

Settlements of Disputes & Arbitration:
The provisions of the Arbitrations Act, 1996, shall apply to the arbitration proceedings. This contract shall be governed by Indian Laws for the time being in force. Further, only District Court at Gautam Budh Nagar shall have exclusive jurisdiction to entertain any suit or action arising out of this contract.

Prepared By:
SAURABH KUMAR

For & on behalf of NTPC Limited.
Sandeep Kumar
SENIOR MANAGER
8826756183
SANDEEPKUMAR09@NTPC.CO.IN

List of Documents

Please note that below documents are needed to be provided along with Invoice.

S.No.	Document Description
1	Invoice

For & on behalf of NTPC Limited.
Sandeep Kumar
SENIOR MANAGER
8826756183
SANDEEPKUMAR09@NTPC.CO.IN

NTPC VENDOR PAYMENT PORTAL & PAYMENT PROCEDURE

1.For all the cases where payment documents are to be directly submitted to NTPC (excluding Payment through Bank cases), the Invoice and supporting document(s) as required in the Purchase Order have to be Digitally Signed with class II or III digital signature and uploaded in the **&gv_cocd&** Vendor Payment Portal https://pradip.ntpc.co.in/VendorFinal/Login.jsp.

In such cases, there will be no requirement of physical copy of invoice & documents except for Lorry Receipts (LRs)/ Delivery Challan, which are normally sent along with the material/ transporter. Bank Guarantees to be sent in original wherever applicable.

2.From 01.01.2020, NTPC will accept only digitally signed Invoice & supporting documents from **Vendors for direct payment cases. Submission of documents in physical form shall not be accepted by NTPC** unless otherwise asked for in the PO.
For such cases of physical submission, Vendors are required to send complete set of documents including invoice etc. addressed to the "Invoice Receipt Center" of the Delivery/ Invoicing Address as mentioned in the Purchase Order Annexure 1/ BOQ Sheet.

While submitting the Invoice/ Bills & related documents in physical form, Vendors are required to mention the following details on the top of the envelope:
a. Invoice/Bill reference No.
b. **NTPC** PO No./ Package no.
c. **NTPC** Vendor Code asper PO

In addition to above, vendors are requested to mention their correspondence E-mail & Mobile No.in the Covering Letter, through which invoice processing related information/clarification request may be sent.

3.Vendors can track / monitor the status of payments from the Vendor payment portal. Help documents are available in the portal. Vendors are requested to make full use of the Vendor Payment Portal.

4.For payment cases through bank, all original documents are to be submitted in bank as per terms of PO.

Alternate Mode of Payment for Micro Small & Medium Enterprises (MSMEs):

Trade Receivables Discounting System (TReDS) is a regulatory framework put in place by the Reserve Bank of India under the Payment and Settlement Systems Act 2007 (PSS Act) to facilitate the financing of trade receivables (invoices) of MSMEs through invoice financing by multiple financiers.

The Reserve Bank of India has granted approval to Mynd Solutions Pvt Limited, A.TREDS Ltd and Receivables Exchange of India Ltd (RXIL) to set up and operate TReDS platforms. The Respective TReDS platforms names of the above-mentioned entities are M1xchange, Invoicemart and TREDS.

Currently NTPC Limited is transacting with M1xchange and RXIL TReDS platforms.
MSME Vendors may choose the TReDS platforms as an alternate payment mechanism.

For queries/ details, the vendor may directly contact M1xchange or RXIL at:-

M1XCHANGE:-
URL: https:\\m1xchange.com
Toll free No.: 1800-103-7261

RXIL:-
URL: https:\\www.rxil.in/Home/Index
Phone: 022-40771424, 40771426
Toll free No.: 1800 1038 311

Vendor must ensure the delivery of material and service before uploading invoices at TReDS portal for discounting. After uploading invoices on TReDS portal, vendor has to upload invoices on NTPC payment portal in case of Non-GeM contract and in case of GeM Contract invoices shall be uploaded on GeM portal, immediately . All relevant documents required for processing of payments as per P.O/Contract terms and conditions shall be made available by the Vendor along with the invoice.

//True Copy//

NTPC LIMITED
(A Government of India Enterprise)
National Capital Power Station, Dadri
P.O.: Vidyut Nagar, Distt. Gautam Budh Nagar, Pin: 201008
(Contract Services)
Ph.: 0120- 2805834, 5848 & Fax No. 0120-2671292, e-mail: sandeepkumar09@ntpc.co.in

Letter of Intent

Letter of Intent Ref. No. 08/CS/P&S/1111 Date: 11.11.2024

M/s. M/s Puranik Brothers (V- 1078159)
New Ramdaspeth,
P.No.110,"Bansiraj" Kachipura
Nagpur (M)- 440010
Email: puranikbrothers@gmail.com

Sub: Letter of Intent for "Consultancy Contract for preparation of Project Feasibility Report (PFR) for use of treated STP Water from Noida STPs in NCTPP Dadri".

Dear Sirs,

1.0 This has reference to the followings:

1.1 Tender ID: 2024_NTPC_91424_1 (NIT No.9900290102)

1.2 Your offer opened on 29.10.2024 & revised offered dated 04.11.2024

2.0 We are pleased to accept your above mentioned offer and award on you the work of "Consultancy Contract for preparation of Project Feasibility Report (PFR) for use of treated STP Water from Noida STPs in NCTPP Dadri" at the contract price of Rs.14,20,250.00 (Rupees Fourteen Lakhs Twenty Thousand Two Hundred Fifty only) exclusive of GST.

2.1 GST as applicable shall be paid extra against submission of GST compliant invoice.

2.2 Terms of Payment: 100% payment shall be released after certification of EIC that the works have been performed in accordance with the Specifications:

The payment shall be released after approval of feasibility report.
Invoice to be raised on delivery/invoice address against the given PO line items.

2.3 The date of start for this work shall be intimated by engineer-in-charge and the completion period shall be 02 Months.

2.5 The Engineer in charge of this work shall be DGM (P&S). You are requested to contact the Engineer in charge immediately for further instructions.

2.6 All other terms & conditions as per tender conditions & GCC.

This letter of Intent is being issued to you in duplicate. You are requested to sign the duplicate copy of this letter of intent as a token of your unequivocal and unconditional acknowledgement of the same and submit the same in our office. The detailed S.P.O. follows.

Thanking You,

For and on behalf of NTPC LTD.

[Sandeep Kumar]
Sr.Manager (C&M)

//True Copy//

ANNEXURE C

PROJECT FEASIBILITY REPORT (PFR) FOR USE OF SECONDARY TREATED WATER FROM NOIDA STPs TO NCTPP DADRI

NIT NO.9900290102/003/1011

Capex Cost: -Rs.1398.41 Crore
Levelized Annual Opex Cost: - Rs.129.24 Crore

Prepared By: Puranik Brothers
Consulting Engineers, Nagpur

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LIST OF ABBREVATIONS

NCTPP	National Capital Thermal Power Plant
PFR	Project Feasibility Report
NTPC	National Thermal Power Corporation
TTP	Treated Tertiary Plant
STP	Sewage Treatment Plant
ROW	Right of Way
UF	Ultrafiltration
PLC	Programmable Logic Controller
SCADA	Supervisory Control and Data Acquisition
ZLD	Zero Liquid Discharge
RO	Reverse Osmosis
MOU	Memorandum of Understanding
NGT	National Green Tribunal
NMCG	National Mission for Clean Ganga
ROU	Right of Use
NCR	National Capital Region
MW	Mega Watt
MU	Million Units
BOQ	Bill of Quantities
CPHEEO	Central Public Health and Environmental Engineering Organisation
PWD	Public Works Department
MJP	Maharashtra Jeevan Pradhikaran
WRD	Water Resources Department
TDS	Total Dissolved Solids
PPM	Parts Per Million
RCC	Reinforced Cement Concrete
NHAI	National Highways Authority of India
CCT	Chlorine Contact Tank
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
NABL	National Accreditation Board for Testing and Calibration Laboratories
MPN	Most Probable Number
BDL	Below Detection Level
DI K9	Ductile Iron K9 (Pipe Class)
PEB	Pre-Engineered Building
MS	Mild Steel
GI	Galvanized Iron
FY	Financial Year
KL	Kilolitre
CSR	Current Schedule of Rates
IDC	Interest During Construction
DPR	Detailed Project Report
PMC	Project Management Consultant
RBI	Reserve Bank of India
UP	Uttar Pradesh
O&M	Operation and Maintenance
MoHUA	Ministry of Housing And Urban Affairs
TSS	Total Suspended Solids

PREAMBLE

Noida Municipal Authority and National Capital Thermal Power Plant (NCTPP) Dadri have entered in a MOU in Year 2018 to utilize 80 MLD secondary treated sewage water generated by Noida Municipal Authority from its two Sewage Treatment Plants (STP's) of capacity 80 MLD in sector 123 and 59 MLD in sector 50 at National Capital Thermal Power Plant (NCTPP) Dadri for its non-potable use.

This project feasibility report has been made to explore the feasibility of utilizing secondary treated water at National Capital Thermal Power Plant (NCTPP) Dadri which is proposed to be supplied from Noida STPs. The Project feasibility report delves into technical, financial and environmental aspects of the complete project i.e. transportation of secondary treated water, requirement of tertiary treatment and integration of treated water into the operations of NCTPP Dadri.

FIGURE 0-1: 80 MLD SEWAGE TREATMENT PLANT, NOIDA

1. INTRODUCTION

1.1. Need of PFR

Government of India through the Power Tariff Policy, 2016 has mandated all Thermal Power Plants to use the treated sewage water from Sewage Treatment Plants (STPs) situated within 50 kms radius for non-potable purposes.

Under this policy framework, Noida Municipal Authority and National Capital Thermal Power Plant (NCTPP), Dadri have entered in a MOU in Year 2018 to utilize 80 MLD secondary treated sewage water generated from Noida STPs located at Sector-50 & Sector-123 to National Capital Thermal Power Project (NCTPP) for its Non-potable application.

There are two STPs of Noida Municipal Authority of capacity 80 MLD in sector 123 and 59 MLD in sector 50, about 31 KM away from NCTPP, Dadri. Noida Municipal authority agreed to supply the secondary treated water to NCTPP from the given points in STP Premises. The secondary treated sewage water shall meet the NGT norms. The secondary treated sewage water shall be supplied by Noida STPs on chargeable basis or at mutually decided rate by both the parties.

NTPC shall make further arrangements to pump the treated sewage water from Noida STPs to NCTPP Dadri power plant by construction of pumping system pipe conveying system including installation of Tertiary Treatment Plant (if required) to make the water quality usable in Thermal power plant requirement at their own cost.

NCTPP Dadri intends the requirement of Project feasibility report to comprehensively assess the technical, economic, and environmental aspects of this proposal that involves infrastructure requirements including pipelines, pumping systems, requirement of tertiary treatment, storage facilities etc as well as its economic aspects- capital investment, operational costs, impact on electricity tariff etc providing a clear economic rationale.

FIGURE 1-1: NCTPP DADRI

1.2. Objective

The primary objective of this report is to provide comprehensive insights for the reuse of secondary treated water of Noida STPs at NCTPP Dadri.

- Technical Feasibility Assessment

To assess the infrastructure requirements for conveying, treating, and storing treated STP water and ensuring compatibility with existing plant systems.

This includes conducting necessary surveys and assessments to determine the quality and quantity of effluent, selecting appropriate technology options for tertiary treatment, and planning the infrastructure for conveying treated wastewater to NCTPP Dadri.

- Economic Analysis

To evaluate the capital expenditure, operational costs, cost-effectiveness of using treated sewage water.
To analyse the potential impact on tariff of NCTPP Dadri's when switching to treated sewage water.

- Regulatory Compliance

To ensure adherence to government and environmental policies mandating the reuse of treated wastewater in industrial applications.

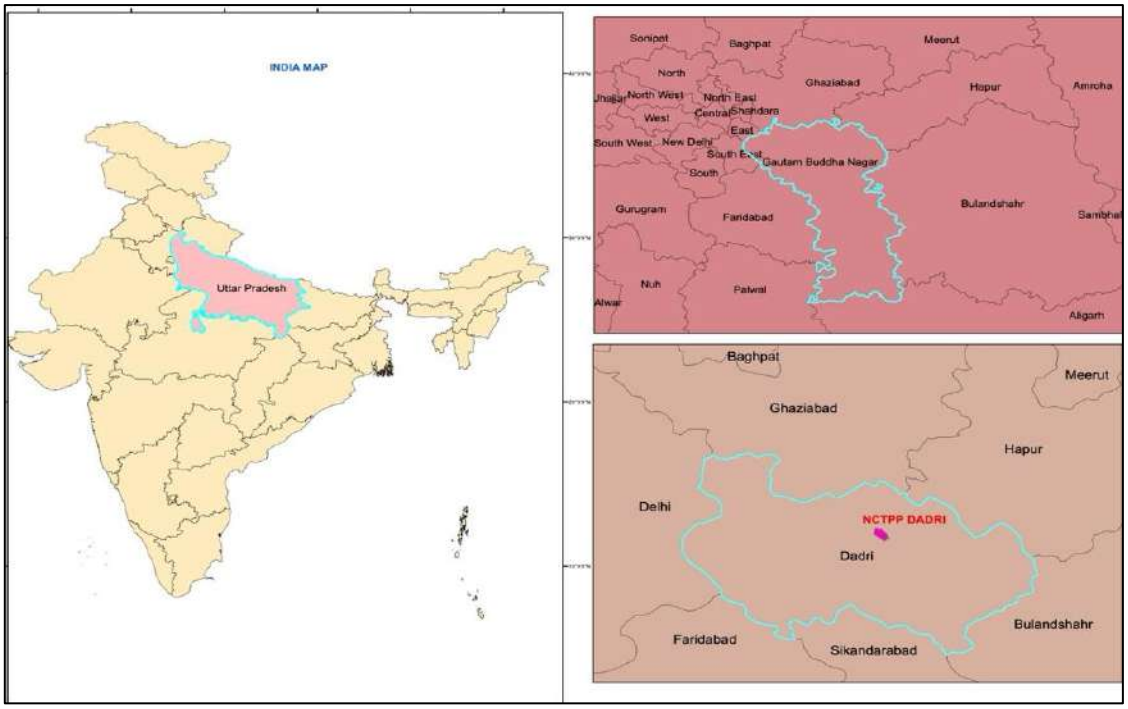
The Project feasibility report shall contain planning for the possibility of treated used water of Noida Municipal Authority by NCTPP Dadri.

- Basic planning of the project
- Data collection of treated sewage and analysis
- Collection and conveyance provision from STP to NCTPP Dadri plant including ROU/ ROW for laying of the pipeline
- Storage and Tertiary treatment Plant
- Providing tentative cost estimates
- Assessment of Tariff impact

1.3. NCTPP DADRI PLANT

Dadri is in Gautam Buddha Nagar district of Uttar Pradesh in National Capital Region (NCR). The NTPC Dadri Power Plant (280 36’ 5” N & 770 36’ 29” E) is situated near Vidyut Nagar, in Dadri.

FIGURE 1-2: LOCATION MAP OF DADRI



NCTPP Dadri has a total installed capacity of 2,650 MW (Coal-based -1820 MW and Gas-based -830 MW) making it a significant power generation facility with following features to keep the facility environment friendly with respect to water and wastewater management within the plant premises-

1. Dry Ash handling system and high ash utilization.
2. Sewage generation from NTPC Dadri is being treated inhouse and is reused internally.
3. Zero Liquid Discharge (ZLD) compliant.

Details Information of plant tabulated below-

TABLE 1-1: INSTALLED CAPACITY OF NCTPP POWER PLANT AT DADRI

Stage	Unit	Installed Capacity(MW)	Date of Commissioning	Residual Life (Considering 25 years of plant life)
1st Stage	1	210	1993	-
1st Stage	2	210	1994	-
1st Stage	3	210	1995	-
1st Stage	4	210	1995	-
2nd Stage	5	490	2010	11*
2nd Stage	6	490	2010	11*
Gas based Units		830	1997	-
Total		**2650 MW**		

The above table shows that the first stage (Unit 1 to 4 and Gas plant) of plant has completed its life. The PLF of the gas-based plant is very low and require minimal water consumption as well as Power Purchase Agreement (PPA) has been relinquished by beneficiaries, hence, Unit 1 to 4 and Gas plant has not been considered for the use of treated STP water.

*Residual life of 2nd stage (Unit 5 & 6) is 11 years, however for completion of project (Pipeline + TTP), approx. 4 year's timeline will be required. Hence the effective residual life with respect to this project would be approx. 7 years. Hence, tariff impact analysis has been carried out based on effective residual life of the power plant.

FIGURE 1-3 NCTPP DADRI

1.4. NOIDA STPs

This PFR is concerned with two Sewage Treatment Plants (STP's) of capacity 80 MLD and 59 MLD of Noida Municipal Authority, located in sector 123 (28° 34'20.65''N & 77° 22'33.56''E) & 50 (28°35'41.82''N & 77°24'28.68''E) respectively at Noida, Dist. Gautam Buddha Nagar, Uttar Pradesh. Presently, treated water from Sewage Treatment Plants (STPs) is utilized for horticulture, irrigation, constructional activity and other related activities and as informed, it is given free of cost at STP end.

FIGURE 1-4WATER SUPPLY FROM UPPER GANGA CANAL TO NCTPP DADRI POND

2. SCOPE OF WORK OF PROJECT FEASIBILITY REPORT (PFR)

2.1. SCOPE OF WORK

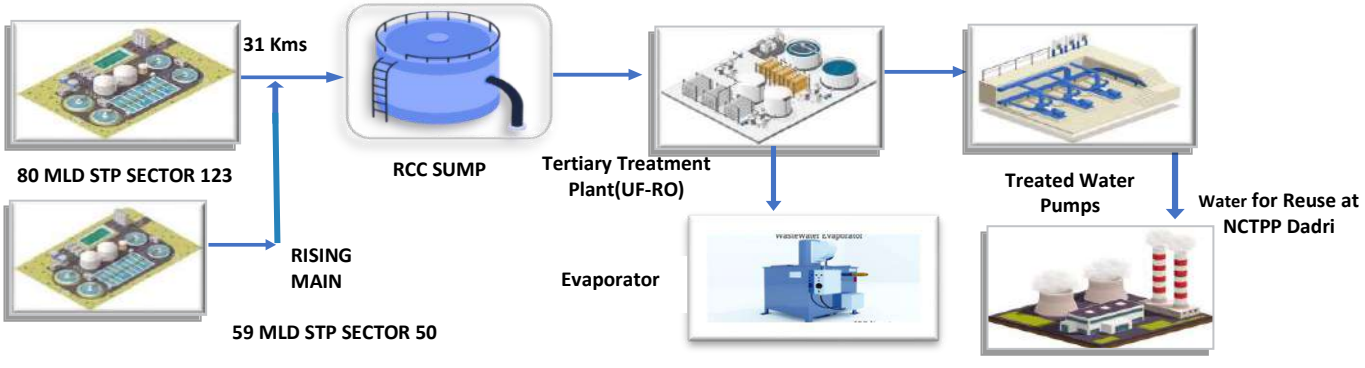
To achieve the objective, following brief scope of work has been identified -

1. **Survey**
   - Site assessment and carrying out route survey of conveying pipeline routing from Noida STPs to NCTPP Dadri.
   - Recommendation of preferred pipeline routing for conveying treated water from Noida STPs to NCTPP Dadri among various options, highlighting all major constraints/ impendent in each route including estimation of capital cost.
   - Preparation of Schematic diagrams of Pumping of secondary treated water from Noida STP to NCTPP Dadri plant.
2. **Tertiary Treatment Facility**
   - Detailed study of quality of water to establish it can be used in plant or not after treatment.
   - Exploring all the required treatment facilities to be establish at NCTPP Dadri plant end to treat 80 MLD secondary treated sewage water to meet the water quality of power plant requirement.
   - Assessment of major design parameter and sizing of treatment facility, pumping and piping system for end use of treated water.
3. **Tentative Cost Estimation**
   - Preparation of major Bill of Quantities (BOQ) and assessment of capital and operating costs for the proposed infrastructure.
   - Preparation of cost estimates of total project including ROU/ ROW for laying of pipeline.
   - Comparative cost analysis and impact on tariff w.r.t use of treated STP water (Considering secondary treated water is supplied on chargeable basis and free of cost both).
   - Estimation of the project implementation schedule for execution of complete project.

3. Schematic Planning & Methodology of the Project

Schematic Planning for Reuse of treated sewage water is proposed as below:

FIGURE 3-1: SCHEMATIC PLANNING FOR WATER REUSE



3.1. Methodology

3.2. PART A – Treated Water Collection Infrastructure & pumping by Rising Main

- Wet Well at both the STP locations
- Pumping Machinery at both the Wet Wells
- Recommendation of preferred pipeline routing for conveying treated water from Noida STPs to NCTPP Dadri plant among various options (Highlighting all major constraints impendent) after site assessment and carrying out route survey of pipeline.
- Selection of technical parameters for Pumping & Piping system.
- Allied Civil works such as compound wall, Electricity Deposit Charges, ROU Charges to PWD and Charges Payable to WRD.

Part B – Tertiary Treatment plant

- STP Water Quality assessment
- Based on STP water quality, selection of Tertiary Treatment Plant (TTP) scheme, Design, drawings and estimates.
- Providing storage facility of treated water, Pumping & Piping system at NCTPP Dadri end for its end use.

Part C – RO reject Handling System

- Evaporator to meet the Plant ZLD criteria

Part -D- Electric Substation

- Installation of suitable capacity outdoor electric substation with 100% stand by transformers within Both the STP & TTP premises with all allied installations.

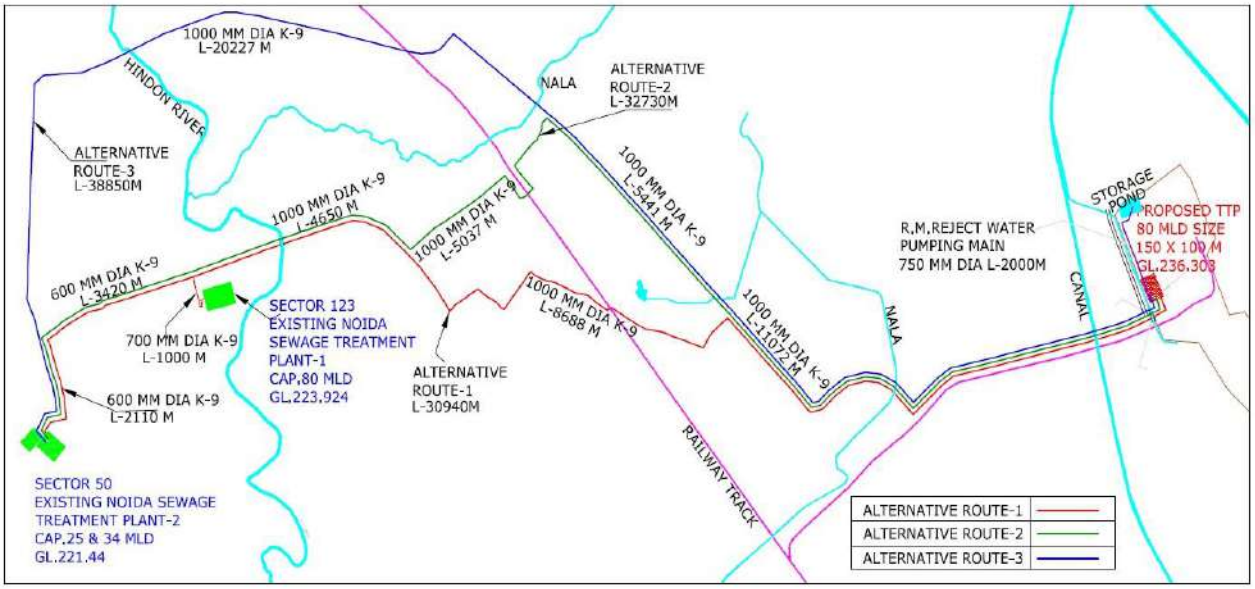
3.3. The Approach for Pumping & Piping system

The details of the STPs and the proposed utilization plan are as follows:

1. STP at Sector-50
   - Capacity of STP: 59 MLD
   - Proposed Supply: 30 MLD of treated water for reuse at NCTPP, Dadri
2. STP at Sector-123
   - Capacity of STP: 80 MLD
   - Proposed Supply: 50 MLD of treated water for reuse at NCTPP, Dadri

3.4. Survey and Route selection

FIGURE 3-2: PROJECT PLANNING FOR WATER REUSE



Based on the survey, three potential routes have been identified for conveying treated sewage water from the STPs to NCTPP Dadri. A detailed study is required to determine the most suitable route, ensuring feasibility, cost-effectiveness, and minimal environmental impact.

The pipeline starting from the 59 MLD STP in Sector-50 shall meet the pipeline coming from 80 MLD STP in Sector-123 meets at a junction point. The distance from junction point to 80 MLD STP at Sector-123 is approx.1000 m and from junction point to 59 MLD STP at Sector-50 is approx. 5530 m. The route details and the selection approach are as follows:

TABLE 3-1 : SUMMARY OF PROPOSED ROUTES

Sr. no	Components	Route 1	Route 2	Route 3
	LENGTH	**30.94 KM**	**32.27 KM**	**38.85 KM**
	Key Feature	Shortest route; potentially cost-effective and time-efficient.	Slightly longer; requires analysis for technical and logistical advantages.	Longest route; likely to incur higher costs for construction and maintenance.
1	Road crossing	3	4	Not Considered for comparison
2	Metro crossing	1	1	
3	Bridge	1	1	
4	River crossing	1	1	
5	Chowk	2	1	
6	Railway crossing	1	1	
7	Nala crossing	1	2	

8	Expressway crossing	1	1	
9	Canal crossing	3	3	

- ***ROUTE 1***

Route number 1 is the shortest route from Noida STPs to NCTPP DADRI with total length of 30,940 m. It has total 7 road crossing in this alignment with total length of 476 m and 1 river crossing of length 70 m and 3 canal crossing with length 64 m and one railway crossing of length 40m. The pipeline should be laid on the right side of road from STP Noida as left side comprises of more hindrances like bridge crossing and many other district roads. The Highest level comes out to be 236.25 m which is near railway crossing.

TABLE 3-2: ROUTE - 1

SR. NO	CHAINAGE	DESCRIPTION	REMARK	PHOTOS
1.	2049-2100	ROAD CROSSING AND METRO CROSSING	51m	
2.	5340-5400	PARTHALA SIGNATURE BRIDGE	60 m	
3.	7220-7290	HINDON RIVER CROSSING	70 m	
4.	9930-10020	CHAR MURTI CHOWK	90 m	
5.	11420-11460	GUJJAR MIHAR BHOJ CHOWK	120 m	
6.	13140-13175	RAILWAY CROSSING	35 m	

7.	20670-20710	ROAD CROSSING	40 m	
8.	22650-22670	NALA CROSSING	20 m	
9.	23195-23250	GT ROAD CROSSING	55 m	
10.	23940-24000	EXPRESSWAY CROSSING	60 m	
11.	27240-27280	CANAL CROSSING	40 m	
12.	27300-27312	CANAL CROSSING	12 m	

13.	28470-28482	CANAL CROSSING NEAR GATE NO.3	12 m	

- **Merits**
  a. This is the shortest route among the 3 Routes which are proposed in the report.
  b. It has 1 nala crossing, 1 river crossing, 3road crossing, 1 railway crossing and 3 canal crossing in this alignment.
  c. As distance is less and low static lift than other alignments hence the pipeline would have less pumping power requirement.
- **Demerits**
  a. Pipeline from STPs in this route shall cross the densely populated area of Noida & Gr Noida and areas like Sadopur and Sadullapur where the road width is 12 m only and shall require meticulous planning & advance technologies, temporary diversions/closure of roads.
  b. It comprises of more bends in this alignment.

- ***ROUTE 2***

Route 2 is the second route which is considered in the report with total length of 32,730 m. It has total 4 road crossing in this alignment with total length of 166 m and 1 river crossing of length 70 m, 3 canal crossing with length 230 m, 2 Nala crossing of 40 m length and 1 railway crossing of length 40 m. The pipeline shall be laid on the right side of road from STP Noida as left side comprises of more hindrances like bridge crossing and many other district roads. The Highest level comes out to be 244.619 m which is near railway crossing.

TABLE 3-3: ROUTE- 2

SR. NO	CHAINAGE	DESCRIPTION	REMARK	PHOTOS
1.	2049-2100	ROAD CROSSING AND METRO CROSSING	51m	
2.	5340-5400	PARTHALA SIGNATURE BRIDGE	60 m	

3.	7220-7290	HINDON RIVER CROSSING	70 m	
4.	9930-10020	CHAR MURTI CHOWK	90 m	
5.	13160-13200	RAILWAY CROSSING	40 m	
6.	19690-19710	NALA CROSSING	20 m	
7.	20140-20160	ROAD CROSSING	20 m	
8.	22610-22650	ROAD CROSSING	40 m	
9.	24530-24550	NALA CROSSING	20 m	
10.	25030-25085	GT ROAD CROSSING	55 m	

11.	25850-25910	EXPRESSWAY CROSSING	60 m	
12.	29110-29150	CANAL CROSSING	40 m	
13.	29190-29202	CANAL CROSSING	12 m	
14.	30345-30357	CANAL CROSSING NEAR GATE NO.3	12 m	

- **Merits**

a. In this route, the roads are wide and large so laying of pipe is more feasible in this alignment however It has 1 chowk crossing.

- **Demerits**

a. Route 2 alignment is 2 km more than the Route 1, hence, it would escalate the total cost of the project.
b. In the alignment, the highest level comes out to be 244.619 which increases the static lift and finally it will result in increase in the pumping power requirement.
c. In Route 2 alignment there is one more nala crossing when compared with the Route 1.
d. It has 4 road crossing and 2 nala crossing in this alignment.
e. Pipeline from STPs in this route shall also cross the densely populated area of Noida/Gr Noida which shall require meticulous planning & advance technologies, temporary diversions/closure of roads.

- **ROUTE 3**

Alternative 3 is the third route which is considered in the report with total length of 38,850 m. It is the longest route for the pipe alignment (8 km more than the Route 1) and static lift is also high (More pumping power requirement) which increases the capital cost and O&M cost also, hence it would not be economical, and this alternative route is less preferred and not considered for further detailing.

Sr. no	Description	Sr. no	Description
1.	Road Crossing And Metro Crossing	11.	45 road crossing
2.	Noida bypass flyover	12.	Nala crossing
3.	Nala crossing	13.	Gt road crossing
4.	18 - 20 Road crossing	14.	Nala crossing
5.	River Crossing	15.	Gt road crossing
6.	25 - 30 Road crossing	16.	Expressway crossing
7.	Taj highway crossing	17.	Canal crossing
8.	More than 30 road crossing	18.	Canal crossing
9.	Railway crossing	19.	Canal crossing near gate no.3
10.	12 road crossing		

3.5. Selection of optimum Route & Details Analysis of selected Route,Pipeline, Pumping system

(a) Selection of optimum Route -

Route 1 has the shortest distance and least hindrances compared to the other two Route. When the cost is compared between Route 1 & 2, first Route is economical. Hence, among the three available Routes, the first Route comes out to be more feasible and economical as compared to other two and it is proposed to be considered for the project.

- The route cuts through densely populated urban areas as well as such areas like Sadopur and Sadullapur, where the road width is a mere 12 meters making it is difficult for smooth pipeline installation.
- The alignment involves multiple critical crossings, including three road crossings, one metro crossing, one railway crossing and three canal crossings including Hindon river.
- This will inevitably cause severe logistical hurdles, prolonged disruptions, and mandatory temporary road closures or diversions, creating widespread public

inconvenience and overburdening local infrastructure. In view of this, it will require extensive planning, sophisticated engineering solutions, and significant financial outlays.

- Additionally, permissions must be obtained from multiple agencies such as NHAI, Railways, Metro Authority, PWD, WRD etc further complicating the process and may jeopardize project timelines.
- Temporary utility relocations and sensitive crossings like the Hindon River and canals demand compliance with stringent environmental laws, adding yet another layer of complexity.

Overall, the execution of Route 1 is also be a daunting task which demands extraordinary effort, coordination, and investment, and posing a formidable challenge to the project's feasibility.

(b) Selection of rising mains

It is proposed to provide suitable diameter DIK-9 pipes as the pumping main for the proposed length. The pipeline shall also be provided with necessary bends, tees, scour valves, air valves, thrust blocks and anchorage. The pipeline shall be underground and shall be having provision for Nala crossing, railway crossing, canal crossing, etc. as per the requirement.

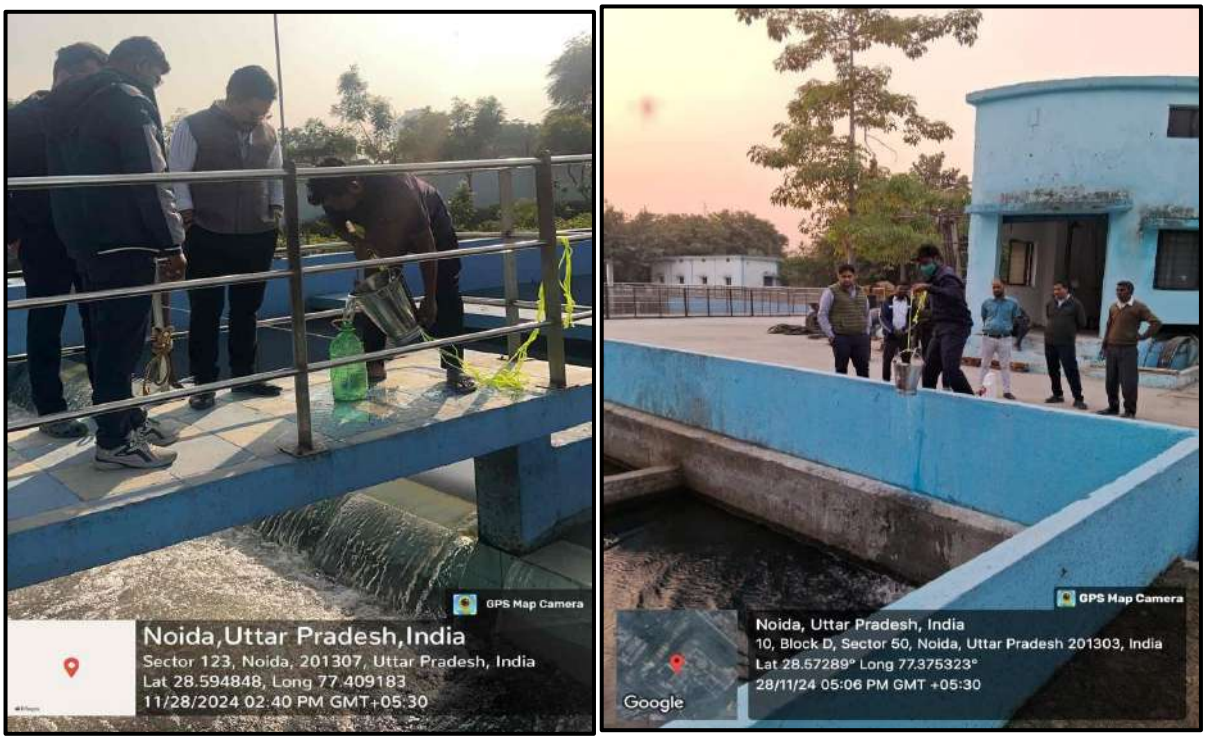
(c) Selection of Pumping System Design

It is proposed to install suitable capacity horizontal split casing centrifugal pumps, to facilitate the pumping of treated sewage water to the NCTPP. The pumping schedule will be determined based on operational requirements. 50 % standby pumps shall be provided

3.6. Sampling of Outlet of Sewage Treatment Plant

To ensure the suitability of treated sewage water for reuse at NCTPP Dadri, treated secondary sewage water samples from the outlet of Chlorine Contact Tank (CCT) were collected on dated 29-11-2024 from both the STPs located at Sector-50 and Sector-123. These samples underwent comprehensive laboratory testing at a QA testing laboratory Pvt. Ltd., NABL-accredited laboratory located at B-76, Sector-64, Gautam Buddha Nagar, Noida, 201301, Uttar Pradesh to evaluate critical water quality parameters.

Figure 3-2: Sample collection from outlet of STP



3.7. Test Parameters and Results

TABLE 3-4: RESULT FOR 59 MLD& 80 MLD STP AT SECTOR 50 & 123 NOIDA

S.No.	Test Parameter	Units	Results		Prescribed Limits
			59 MLD STP	80 MLD STP	As per CPHEEO & NGT Guidelines
1	pH Value at 25°C	-	7.65	7.11	5.5-9
2	Chemical Oxygen Demand (COD)	mg/l	40	20	50
3	Sulphate as SO_4	mg/l	260.1	81.9	-
4	Biochemical Oxygen Demand (5 days at 27°C)	mg/l	12	6	10
5	Total Suspended Solids (TSS)	mg/l	16	4	20
6	Total Dissolved Solids (TDS)	mg/l	2135	1348	-
7	Total Hardness as $CaCO_3$	mg/l	508	284	-
8	Total Nitrogen	mg/l	6.42	3.46	10
9	Total Kjeldahl Nitrogen	mg/l	3.20	1.8	-
10	Alkalinity as $CaCO_3$	mg/l	305	130	-
11	Chloride as Cl	mg/l	572.32	417.37	-
12	Fecal Coliform	MPN/100	Absent	Absent	100
13	Silica as SiO_2	mg/l	0.1	0.089	-
14	Ammonia	mg/l	1.5	0.92	-
15	Fluoride as F	mg/l	0.089	0.065	-
16	Phosphate as PO_4	mg/l	0.65	0.46	1

3.8. Additional Quality Parameters for use of Treated water in TTPs

TABLE 3-5 : ADDITIONAL QUALITY OF PARAMETERS FOR USE OF TREATED WATER IN TTP

S No	Parameters	Unit	Additional Quality Parameters for use of STP water in TPPs
1	TDS	ppm	<400
2	Chloride	ppm	<60
3	Total Hardness	ppm	<250
4	Ammonia (as NH3)	ppm	<5

3.9. Analysis for Treated Sewage Reuse in Thermal Power Plant at NTPC Dadri

From the above table, it is observed that key water quality parameters i.e. TDS, total Hardness, and chloride levels at STP outlet in relation to the required plant's water quality is very high and not suitable for its direct use. It needs further tertiary treatment to make it usable at NCTPP Dadri.

It is assumed that Noida Authority shall ensure that the water quality at the inlet of the Tertiary Treatment Plant (TTP) is maintained according to the specified standards. Deviations from the required quality parameters may compromise the proper functioning of the TTP system. Prolonged deviations could lead to system failures or even a complete collapse, potentially causing a water shortage or outage at NTPC Dadri. Ensuring consistent water quality is therefore critical for the sustained operation of the TTP and uninterrupted water supply to NCTPP Dadri.

IMPACT OF HIGH TDS ON TTP system

1. **Increase in Reject TDS**:
The reject stream or concentrate in UF and RO systems will have a significantly higher concentration of dissolved solids compared to the feed water. This is because RO membranes primarily separate water from salts, and the salts are rejected into the concentrate stream. So, if the inlet water has high TDS, the reject water will be more concentrated.
2. **Higher Water Recovery Costs**:
If the TDS levels in the inlet are high, the recovery rates (the percentage of water recovered as permeate) are usually lower. This increases the amount of reject water, leading to higher disposal costs and a need for effective management of concentrated reject water.
3. **Scaling and Fouling**:
High TDS, especially calcium, magnesium, and sulphate ions, can lead to scaling on the RO membranes. The higher the TDS in the feed, the more likely the system will experience scale formation, reducing the lifespan of the membranes and increasing maintenance costs.

4. **Membrane Performance**:
High TDS can also affect the permeability of the RO membrane. Over time, the performance of the membranes may degrade if they are exposed to high TDS levels consistently, necessitating more frequent cleaning or replacement.

5. **Requirement of reject handling system**
As reject of RO system shall have very high TDS and NCTPP Dadri is ZLD compiled hence it will require a reject handling system.

3.10. Parameters for Design of TTP

TABLE 3-6: INLET PARAMTERS FOR TTP

Sr. No.	Parameters	Values after secondary treatment
1	pH	6.5 to 9.0
2	Biochemical Oxygen Demand (BOD_5)	≤ 10 mg/l
3	Chemical Oxygen Demand (COD)	≤ 50 mg/l
4	Total Suspended Solids (TSS)	≤10 mg/l
5	Total Phosphorous (TP)	≤ 1 mg/l
6	Total Nitrogen (TN)	≤ 10 mg/l
7	Ammonical Nitrogen (NH3-N)	≤ 5 mg/l
8	Faecal Coliform	≤ 230 MPN/100 ml
9	TDS*	2241.75
10	Chlorides*	600.936
11	Hardness*	533.4

Note: * Considering seasonal fluctuation in the parameters of the secondary treated water samples, 5% margin has been considered for the design purpose over and above of the actual values received.

Tertiary Treatment Plant (TTP)

The Tertiary Treatment Plant (TTP) will incorporate key components such as Ultra Filtration (UF) for removing suspended solids and microorganisms, Reverse Osmosis (RO) for eliminating dissolved salts and impurities, and a disinfection to ensure effective microbial control and water sterilization. The system is designed with all pumps and tanks supporting the UF and RO racks above the storage tank slab to ensure streamlined operations, ease of maintenance, and optimal space utilization. The plant will be housed in a Pre-Engineered Building (PEB) structure, including an air-conditioned panel room to safeguard electrical and operational systems. Additionally, a collection tank will be constructed to store treated water, which will then be pumped to the NCTPP Dadri for its end use. This facility is designed to deliver efficient treatment performance while adhering to the stringent water quality requirements of the plant.

One day storage facility has been considered to store the tertiary treated water to meet the supply/demand fluctuations. Required pumping and piping system from storage to terminal point has been considered.

(a) Ultrafiltration:

As Ceramic membranes outperform in terms of permeability, flux rate, chemical resistance, and durability and it has no limitations against oxidants, acids, or caustics, require no pre-treatment for TSS, and can handle high temperatures (up to 100°C) hence the same has been considered for UF system. Additionally, they have a longer life, no shelf-life restrictions, and lower energy requirements, with high flexibility and minimal maintenance.

(b) Reverse Osmosis:

There are two types of RO membrane available in thin film composite polyamide. We proposed Stage 1 RO after UF system. However, the reject of RO shall have TDS more than 14000 PPM which shall further be passed through Stage 2.

Brackish Water membrane Stage 1: For range TDS 2100 to 14000 PPM
Sea Water Membranes Stage 2: For range 14000 to 28000 PPM

Table 3-7: Outlet parameters of TTP

Sr. No.	Parameters	Values after tertiary treatment
1	pH	6.5 to 9.0
2	Biochemical Oxygen Demand (BOD_5)	≤ 10 mg/l
3	Chemical Oxygen Demand (COD)	≤ 50 mg/l
4	Total Suspended Solids (TSS)	≤ 5 mg/l
5	Total Phosphorous (TP)	≤ 1 mg/l
6	Total Nitrogen (TN)	≤ 10 mg/l
7	Ammonical Nitrogen (NH3-N)	≤ 5 mg/l
8	Turbidity	≤ 5 NTU
9	Faecal Coli form	BDL
10	TDS <400 ppm*	<100 ppm#
11	Chloride<60 ppm*	<30 ppm#
12	Total Hardness<200 ppm*	<60 ppm#
*As per Guidelines # As per Design		

3.11. Evaporater

NCTPP Dadri plant is based on dry ash disposal technique. Further, as per guideline, NCTPP Dadri is meeting the ZLD criteria hence RO reject cannot be disposed of outside, which requires to adopt a suitable technology for its disposal. In the available market, evaporator provides the optimum solution to handle such high TDS water. Accordingly, it has been envisaged in this project.

Evaporators are used to concentrate and reduce the volume of high-TDS reject water by converting it into a solid or concentrated brine. This method prevents the direct disposal of harmful contaminants into the environment and ensures compliance with environmental regulations. Although evaporators involve higher capital and operational costs, they are effective in achieving zero liquid discharge (ZLD) and protecting water bodies from pollution.

3.12. Project Schedule

Completion of Project (Conveying Pipeline & TTP) is estimated approx. 4 years. Residual life of the plant is 11 years. Considering the project schedule, the effective residual life would be approx. 7 years. However, project cost has been calculated for 7 & 15 years also to assess the feasibility.

4. Components of the project based on 1st Route

4.1. WET WELL

A reinforced concrete chamber designed to hold the flow of secondary treated water from STP. The capacity of the Wet Well is such that adequate detention time is available during average and peak flow conditions. The structure shall be leak-proof and resistant to chemical reactions from water constituents. Suitable arrangement shall be provided for lifting of Pumps.

Two wet wells for 30 MLD and 50 MLD treated water are proposed separately.

TABLE 4-1: WET WELL SIZE

Sr. No.		Wet well	
	Details	At 59 MLD STP	At 80 MLD STP
1	Detention time	15 min	15 min
2	Capacity	627 Cum	1042 Cum
3	Size	11m L X 19m W X 3m Liquid Depth	17m L X 20 W X 3m Liquid Depth

4.2. SUBSTATION AT WET WELL

Electrical Substations of 800 KVA & 1000 KVA capacity at Sector-50 STP and at Sector-123 STP respectively near Wet Well is proposed as per the design.

4.3. TREATED SEWAGE WATER PUMPING MACHINERY

Appropriate pumping machinery of HSC shall be provided for STP outlet water till wet well and further till RCC SUMP at NCTPP Dadri. Based on incoming flow conditions, adequate nos. of Pumps shall start / stop automatically to cater the pumping requirements.

For STP 59 MLD: - Treated water pumping machinery comes out to be 320 Hp (2 Working + 1 Standby, Q= 684848 Lit/Hr, H=71 m)

For STP 80 MLD: - Treated water pumping machinery comes out to be 425 Hp (2 Working + 1Standby, Q= 1136364 Lit/Hr, H=57 m) from STP 80 MLD.

4.4. TREATED SEWAGE PUMPING MAIN

- The pipeline diameter comes out to be 600 mm having distance of 5530 m from STP 59 MLD to Junction point.
- The pipeline diameter comes out to be 700 mm having distance of 1000 m from STP 80 MLD to Junction point.
- The combined pipeline diameter comes out to be 1000 mm having total distance of 24410 m from Junction point to NTPC tertiary treatment plant.

Secondary Treated Sewage Pumping Main as per below is proposed:

TABLE 4-2: SECONDARY TREATED WATER PUMPING MAIN

From	To	Diameter & Class of Pipe	Length
Sector-50 Wet Well of 30 MLD	Junction point	600 mm dia DI K-9	5530 m
Sector-123 Wet Well of 50 MLD	Junction point	700 mm dia DI K-9	1000 m
Junction Point	Dadri NCTPP	1000 mm dia DI K-9	24410 m
Total length of Rising Main			**30940 m**

4.5. STRUCTURAL BRIDGE FOR RIVER, NALA, CANAL CROSSING, RAILWAY CROSSING AND ROW

- For crossing of Hindon river canals and nalas it is proposed to lay the pipeline on structural bridges supported on RCC piers of total length of 250 m has been considered.
- Railway Crossing is proposed by push through method for 70 m length of 1000 mm dia MS pipe. Road Crossing is also proposed by and 576 m length of 1000 mm dia MS pipe.
- Right of way (ROW) charges have been considered.

4.6. RCC SUMP CUM EQUILIZATION TANK

The Secondary treated water from sewage treatment plants is proposed to be collected in RCC Sump of capacity 75 lac liters (2 hrs storage) at the TTP site. Further this water shall be fed to Ultra filtration feed tank via pumping system.

4.7. TERTIARY TREATMENT PLANT

A tertiary treatment plant of 80.00 MLD is proposed at NCTPP Dadri end.

The 80 MLD water is passed through Ultra filtration (UF) system where 75 MLD shall be permeate and a reject of 5 MLD shall be collected in sump having TDS less than 2100.Sludge Thickener unit for ceramic membrane reject handling of 5 MLD with all necessary electro mechanical equipment. The UF permeate shall be further fed to Reverse Osmosis (RO) System. The RO (stage – I) permeate shall be 64 MLD and reject shall be 11 MLD. The 11 MLD RO (stage – I) reject shall be further treated in (stage – II) RO. The permeate of 5.6 MLD from RO (stage – II) shall be usable for reuse.

Hence, the total permeates of RO (Stage - I & II) of ~ 69.6 MLD shall be further sent to storage tank (One day capacity) at NCTPP for reuse.

4.8. TERTIARY TREATED WATER PUMPING MACHINERY

Appropriate pumping machinery shall be provided to pump the Tertiary treated water to CW channel of Stage-II of NCTPP Dadri. Suitable combination of Vertical Pumps shall be provided to cater the pumping requirements at average and peak flow conditions.

TABLE 4-3: TERTIARY TREATED WATER PUMPING DETAILS

Sr No	Particulars	Details
1	Capacity of Pump	1590909 Lit/hr @20 m head
2	Type	Vertical Turbine Pump
3	Quantity	2W + 1S

4.9. PUMPING MAIN FOR CONVEYANCE OF TERTIARY TREATED WATER TO RAW WATER POND OF NCTPP DADRI

The tertiary treated sewage shall be conveyed to Raw water pond of NCTPP Dadri using DI-K9 pipe of 750 mm dia and length of 2 Km.

4.10. RO Reject Handling System

The reject water from the tertiary treatment process has a very high Total Dissolved Solids (TDS) concentration of **28,000 mg/L**, which cannot be utilized any where and to meet the ZLD guidelines, it shall be further sent to evaporator system. The reject of RO (stage – II) of 5.4 MLD shall be further treated in evaporator. Details has been shown in Mass balance Diagram.

4.11. Sub-Station at TTP end

Electrical Substations of 6000 KVA at TTP end is proposed as per the design.

4.12 Control & Instrumentation

The entire project shall be controlled and monitored using PLC SCADA Automation system. The flows shall be monitored by electromagnetic flowmeters of Nominal dia 600mm at wet well -1, 700mm at wet well-2 and 1000mm Dia at NCTPP Dadri end shall be installed. This reduces the cost of manpower as complete operation can be controlled from a central control room. All key functions like valves, flowmeters, pumps, dosing systems etc shall be controlled as well as data logged.

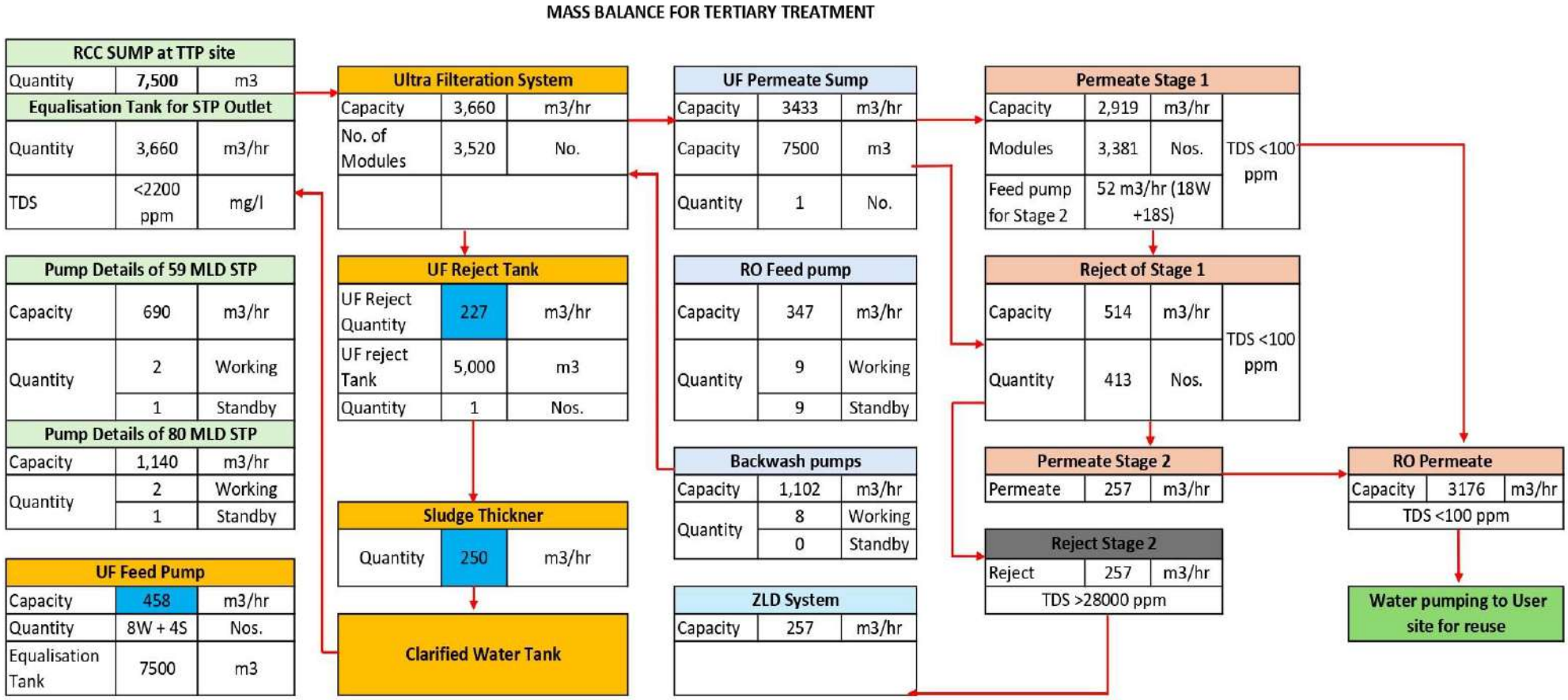
Complete historical records of plant operations are available readily through PLC SCADA Automation System.

4.13 Civil Facilities for the Treatment Plant including other system

The project includes a work shed with a height of 6 m. The civil structure will feature a robust design of foundation, Side Walls, Roofing and Cladding and allied Civil Works etc.

As the TDS level of reject water shall be 28000 mg/l it is necessary to propose ZLD with evaporators with secondary RO having combined capacity of 6 MLD out of which capacity of evaporators shall be 2 MLD.

FIGURE 4-1: PROCESS FLOW AND WATER BALANCE



5. COSTING OF THE PROJECT

The capital and operational cost is based on tentative estimates at CSR /available market rate.

NCTPP DADRI		
Supply of 80 MLD Secondary Treated Sewage from Noida STPs to NCTPP Dadri		
GENERAL ABSTRACT CAPITAL WORK - PART A		
Sr.No.	**Particulars**	**Amount (Rs. In Crore)**
1	**Construction Of RCC Wet Well & Pump House** at 59 MLD STP Premises, Sector 50	1.73
2	**Construction Of RCC Wet Well & Pump House** at 80 MLD STP Premises, Sector 123	2.14
3	**Sub Station** (800 KVA and 1000 KVA at STP end) & 6000 KVA (at TTP end)	5.50
4	**Pumping Machinery (Vertical Turbine Pump) at Wet Well, to pump Secondary Treated Water from STP end to NCTPP Dadri end** A) At 59 MLD STP - 320 BHP (2W + 1S, Q= 684848 Lit/Hr, H=71 m) B) At 80 MLD STP -425 BHP(2W + 1S, Q= 1136364 Lit/Hr, H=57 m)	11.29
5	**Rising Main from STP end to NCTPP Dadri end** 600 mm DIA – 5,530m, 700 mm DIA - 1000 m and 1000 mm DIA - 24,410 m. Total Length – 30.94 Km, DI K-9 pipe with river, railway and road crossing	175.82
6	**Structural Bridge** for river, nala and canal crossing, railway crossing and ROW charges payable to PWD #	23.87
7	**RCC Sump Cum equalization Tank at NCTPP Dadri end** 75 LACS LIT. CAPACITY	2.61
8	**Tertiary Treatment Plant of 80 MLD CAP With UF & RO System** (Incl. Civil, Electrical, Mechanical) *	755.20
	RCC Storage Sump for Tertiary treated water at NCTPP Dadri end 720 LACS LIT. capacity	25.06
9	**Pumping Machinery (Vertical Turbine Pump) to pump Tertiary Treated Water from Storage sump to CW channel** 200 HP VERTICAL TURBINE PUMP (2W+1S) Q= 1568182 Lit/Hr, H=19 m	3.18
10	**Rising Main from Storage sump to CW channel -** Providing Lowering Laying Jointing of 750 mm dia DI K-9, 2000 m long	5.94
11	**FLOW METER** (600 mm,700 mm & 1000 mm) Nominal Diameter and PLC Scada	6.17
12	ALLIED CIVIL WORKS	4.50
13	**ZLD SYSTEM** with Evaporator & secondary RO (For RO Reject) *	143.72

	Total in Crore.	1166.73
	Add 1% Contingencies charges on Net Cost	11.67
	IDC	185.01
	Gross Total cost of Scheme in Rs.	1,363.41
	Add 3% Preparation of DPR & PMC charges on Net Cost	35.00
	Part A : CAPITAL WORKS (In Crore)	**1398.41**

GENERAL ABSTRACT OPERATION & MAINTAINANCE WORK (PART B) Without water charges (For first year)		
Sr. No.	**Particulars**	**Amount (Rs.) in Cr**
1	**Operation and maintenance per annum**	
a	Components other that Tertiary Treatment Plant (TTP)	9.93
b	Tertiary Treatment Plant (TTP) with UF & RO system	27.99
c	Evaporator Plant (For RO Reject)	70.51
	Part B: Total (a+b+c)	**108.44**

***Note:** The cost has been considered as per vendor quote.

- The charges paybale to PWD,NHAI,Railway and other statutary departments has been considered as token provision.
- No land Cost has been considered in the estimated cost
- O&M cost estimates have been worked on the basis of RBI rate of inflation for UP state which is 5.8% per annum

6. Impact on Tariff

The model has been developed considering with and without secondary treated sewage water charge. It has been assumed that secondary treated Sewage water shall be supplied at the same rate as that of present raw water charges of Rs. 1.11/- per KL, which is currently paid by NCTPP Dadri to WRD. Additionally, it is assumed that approx. expenditure of Rs. 1/- per KL is required for treatment of Raw Water.

Capex (Rs. In Cr.)		**Levelized annual Opex (Rs. In Cr.)**		**Total (Rs. In Cr.)**		**Impact on Tariff (in Paisa /Unit)**	
		With Secondary treated Water Charges	**Without Secondary treated Water Charges**	**With Secondary treated Water Charges**	**Without Secondary treated Water Charges**	**With Secondary treated Water Charges****	**Without Secondary treated Water Charges**
For 7 years	1398.41	135.40	129.24	2346.19	2303.07	79	78
For 15 years	1398.41	171.88	165.72	3976.65	3884.24	67	66

****Note:** Impact on tariff has been calculated considering Rs 1.11 /KL of secondary water charges, however the same will further increase if secondary water charges increases from considered rate.

7. ENVIRONMENTAL ASPECTS

The envisaged project helps in utilization of wastewater, thereby reduces freshwater consumption. However, conveying proposed secondary treated sewage water from NOIDA STPs to NCTPP Dadri for further tertiary treatment & use can have following environmental impacts:

- **Increased carbon emission:** Pumping of STP water and tertiary treatment at NCTPP Dadri involves substantial energy (approx. 2,22,650 Units per day) consumption. This high energy consumption leads to additional burning of coal of approx.158 tons per day resulting in additional emission of approx. 208 tons of CO_2 per day.
- **Other impact:** Laying pipelines in densely populated or ecologically sensitive areas poses environmental and social challenges. Cutting down trees and vegetation to clear paths for pipelines leads to loss of biodiversity and increased soil erosion.

8. CONCLUSION

The project feasibility report for the use of secondary treated sewage water from NOIDA STPs at NCTPP Dadri has been prepared to select the most techno-economic solution among the various available options-

8.1. Technical Consideration

A. The proposed two-point drawl of treated water of 50 MLD & 30 MLD from STP at Sector-123 & 50 respectively has been considered based on STP capacity. At both the locations, complete pumping facilities (with RCC wet well) including substation has been considered which has to be constructed within the Noida STP premises.

B. With respect to pipeline routing from Noida STP to NTPC Dadri, Route- 1 is the most suitable option being the shortest route (30.94 Km) and considering merits and demerits of all the three alternative alignments. However, the selected route has also constraints and challenges like crossing through densely populated urban areas, three road crossings, one metro crossing, one railway crossing and three canal crossings including Hindon river. **Additionally, permissions are to be obtained from multiple agencies such as NHAI, Railways, Metro Authority, PWD, WRD etc which may jeopardize the project timelines**.

C. The outlet parameters of treated STP water are containing very high TDS, Hardness and Chlorides which necessitates the requirement of Tertiary treatment of STP water to make it usable at NCTPP Dadri.

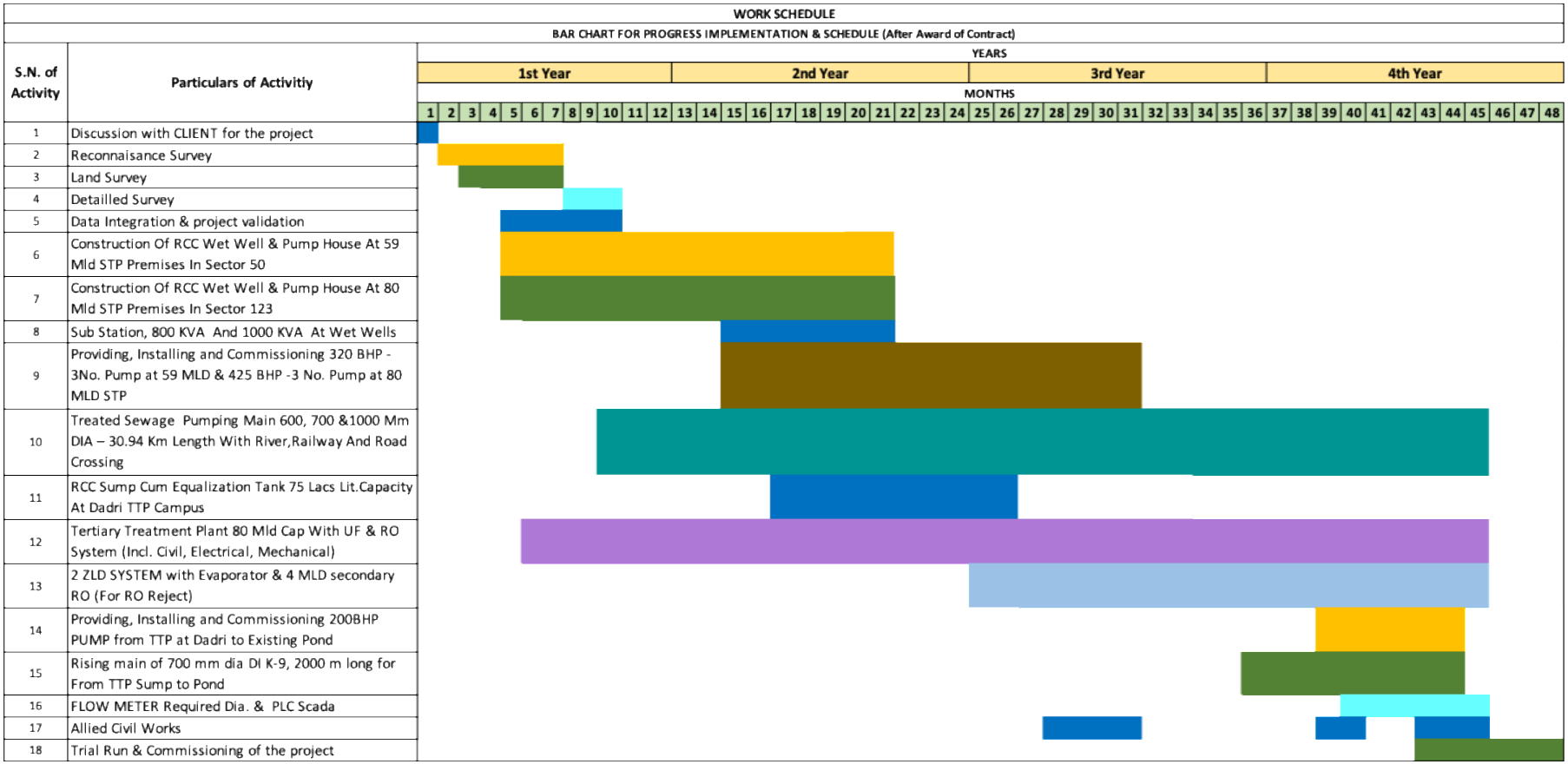
D. NCTPP Dadri is ZLD complied plant and RO reject of such high TDS cannot be handled anywhere hence RO reject handling system (Evaporator system) has been envisaged to meet the ZLD criteria.

E. As the design plant life of Stage-II units is only 11 years remaining and the estimated project timeline of 4 years will be required for completion of the complete project hence, net available time for recovery of project expenditure with operation charges shall be only 7 years. However, project cost has been calculated for 7 & 15 years for comparison and assessment of the feasibility.

8.2. Financial Consideration

A. The tentative capex cost of project is arrived at is Rs. 1398.41 Crores.
B. **7 Years of operation-** The levelized annual O&M cost per year shall be Rs. 135.40 Crore & 129.24 Crore with and without secondary treated water charge respectively. The total Cost (Capex + Opex) of 7 years comes out to Rs. 2346.19 Cr & 2303.07 Cr with and without secondary treated water charge respectively.
C. **15 Years of operation-** The levelized annual O&M cost per year shall be Rs. 171.88 Crore & 165.72 Crore with and without secondary treated water charge respectively. The total Cost (Capex + Opex) of 15 years comes out to Rs. 3976.65 Cr & 3884.24 Cr with and without secondary treated water charge respectively.
D. **Impact on Tariff-** Impact on Tariff as calculated is 79 & 78 Paisa/ Unit with and without secondary treated water charge respectively for 7 years. Impact on Tariff as calculated is 67 & 66 Paisa/ Unit with and without secondary treated water charge respectively for 15 years.

FIGURE 8-1: PROJECT IMPLEMENTATION SCHEDULE



S.N. of Activity	Particulars of Activitiy
1	Discussion with CLIENT for the project
2	Reconnaisance Survey
3	Land Survey
4	Detailled Survey
5	Data Integration & project validation
6	Construction Of RCC Wet Well & Pump House At 59 Mld STP Premises In Sector 50
7	Construction Of RCC Wet Well & Pump House At 80 Mld STP Premises In Sector 123
8	Sub Station, 800 KVA And 1000 KVA At Wet Wells
9	Providing, Installing and Commissioning 320 BHP - 3No. Pump at 59 MLD & 425 BHP -3 No. Pump at 80 MLD STP
10	Treated Sewage Pumping Main 600, 700 &1000 Mm DIA – 30.94 Km Length With River,Railway And Road Crossing
11	RCC Sump Cum Equalization Tank 75 Lacs Lit.Capacity At Dadri TTP Campus
12	Tertiary Treatment Plant 80 Mld Cap With UF & RO System (Incl. Civil, Electrical, Mechanical)
13	2 ZLD SYSTEM with Evaporator & 4 MLD secondary RO (For RO Reject)
14	Providing, Installing and Commissioning 200BHP PUMP from TTP at Dadri to Existing Pond
15	Rising main of 700 mm dia DI K-9, 2000 m long for From TTP Sump to Pond
16	FLOW METER Required Dia. & PLC Scada
17	Allied Civil Works
18	Trial Run & Commissioning of the project

Disclaimer

The project feasibility report envisages the basic planning and feasibility of all the crucial aspects. Considering the estimated project cost (Capital and O&M) including the constraints & challenges involved in the project, environmental impact, residual life of NCTPP Dadri plant and its direct Impact on tariff (which will be additional burden on DISCOMs and ultimately shall be borne by the end consumer) etc, the feasibility of the project may be decided Judiciously.

TO DELHI

TO HAPUR

ALTERNATIVE ROUTE -3
L-38850M

L-20227M

NALA CROSSING

RAILWAY CROSSING

230.542

HINDON RIVER

RIVER CROSSING

ALTERNATIVE ROUTE-2
L-32730M

NALA CROSSING

GT ROAD

BISRAKH ROAD

230.864

RAILWAY CROSSING

PARTHALA
SIGNATURE BRIDGE
CHOWK

222.357

VIKAS ROAD

227.329

CHAAR MURTI CHOWK

GT ROAD CROSSING

NALA

234.971

ADMINISTRATIVE
BUILDING

R.M.REJECT WATER
PUMPING MAIN
L-2000M

CANAL

STORAGE
POND

NTPC-DADRI

CW.CHANNEL

PROPOSED STP
SIZE 130 X 140 M
GL.226.324

GATE NO.3
NTPC DADRI

CANAL CROSSING

223.167

SECTOR 122
EXISTING NOIDA SEWAGE
TREATMENT PLANT-1
CAP.80 MLD
GL.223.824

ALTERNATIVE
ROUTE-1
L-30940M

GUJJAR MIHIR BHOJ CHOWK

RAILWAY CROSSING

CANAL CROSSING

EXPY ROAD CROSSING

231.545

GT ROAD CROSSING

ROAD CROSSING

ROAD
CROSSING

RAILWAY TRACK

RAILWAY TRACK

TO SIKANDRABAD

TO ALIGARH

SECTOR 50
EXISTING NOIDA
SEWAGE TREATMENT
PLANT-2 CAP.25 & 34
MLD
GL.221.44

HINDON RIVER

PROJECT TITLE	USE OF TREATED STP WATER FROM NOIDA STP IN NCTPP DADRI POWER PLANT	
CLIENT	NCTPP DADRI POWER PLANT	
CONSULTANT	PURANIK BROTHERS CONSULTING ENGINEERS 61, Nilkanth App. Surendra Nagar,RPTS Road NAGPUR 440015, EMAIL: puranikbrothers@gmail.com	

	NAME	DATE
DRAWN	SM	01.11.24
DESIGNED	ABD	01.11.24
CHECKED	NB	01.11.24
APPROVED	RPD	01.11.24

DWG. TITLE: KEY PLAN ON IMAGE

RELEASED FOR: INFORMATION; SUBMISSION ✓; APPROVAL; CONSTRUCTION

DEPT - CIVIL | JOB NO - | SHEET: 01 OF 01 | SIZE : A3

DRAWING NO. PB-C74875-ABI-01-SUR-003 | REVISION 0

TO DELHI

TO HAPUR

ALTERNATIVE ROUTE -3
L-38850M

L-20227M

TO DELHI

RIVER CROSSING

HINDON RIVER

RAILWAY CROSSING

NALA CROSSING

NALA

230.542

PARTHALA
SIGNATURE BRIDGE
CHOWK

RIVER CROSSING

BISRAKH ROAD

L-5037M

230.864

L-5441M

GT ROAD

1000 MM DIA K-9
L-26100 M

ALTERNATIVE ROUTE-2
L-32730M

NALA CROSSING

222.351

VIKAS ROAD

L-4650M

600 MM DIA K-9
L-5530 M

700 MM DIA K-9
L-1000 M

223.167

L-3420M

L-1000M

SECTOR 123
EXISTING NOIDA SEWAGE
TREATMENT PLANT-1
CAP.80 MLD
GL.223.924

CHAAR MURTI CHOWK

227.129

RAILWAY CROSSING

1000 MM DIA K-9
L-24410 M

ALTERNATIVE
ROUTE-1
L-30940M

L-8688M

NALA

234.971

ROAD CROSSING

GT ROAD

L-11072M

231.545

ROAD CROSSING

GUJJAR MIHIR BHOJ CHOWK

RAILWAY CROSSING

RAILWAY TRACK

RAILWAY TRACK

TO SIKANDRABAD

TO ALIGARH

CANAL CROSSING

EXPY ROAD CROSSING

GT ROAD CROSSING

ROAD
CROSSING

EXPY ROAD CROSSING

CANAL

CANAL

ADMINISTRATIVE
BUILDING

R.M.REJECT WATER
PUMPING MAIN
L-2000M

STORAGE
POND

NTPC DADRI

CANAL

CW.CHANNEL
PROPOSED TTP 80MLD
SIZE 150 X 100 M
SL.236.303

CANAL CROSSING

GATE NO.3
NTPC DADRI

CANAL

CANAL CROSSING

CANAL

HINDON RIVER

SECTOR 50
EXISTING NOIDA
SEWAGE TREATMENT
PLANT-2 CAP.25 & 34
MLD
GL.221.44

L-2110M

N
W
E
S

PROJECT TITLE	USE OF TREATED STP WATER FROM NOIDA STP IN NCTPP DADRI POWER PLANT				
CLIENT	NCTPP DADRI POWER PLANT				
CONSULTANT	PURANIK BROTHERS CONSULTING ENGINEERS 61, Nilkanth App. Surendra Nagar,RPTS Road NAGPUR 440015, EMAIL: puranikbrothers@gmail.com				
	NAME	DATE	DWG. TITLE: KEY PLAN		
DRAWN	SM	01.11.24			
DESIGNED	ABD	01.11.24			
CHECKED	NB	01.11.24			
APPROVED	RPD	01.11.24			
RELEASED FOR: INFORMATION			DEPT - CIVIL	JOB NO -	SHEET: 01 OF 01
RELEASED FOR: SUBMISSION	✓		DRAWING NO. PB-C74875-ABI-01-SUR-003		SIZE : A3
RELEASED FOR: APPROVAL					REVISION
RELEASED FOR: CONSTRUCTION					0

55
3411
34

155.0
60.0
95.0
15.0
3.0
25.0
3.0
25.0
24.0
56
3412
100.0
UF-1
UF-2
UF-3
UF FEED TANK
+ UF SYSTEM
UF-4
UF-5
UF-6
UF-7
UF-8
RO SYSTEM
RO-1
RO-2
RO-3
RO-4
RO-5
RO-6
RO-7
RO-8
RO-9
3.0 M. WIDE ROAD
3.0 M. WIDE ROAD
3.0 M. WIDE ROAD
5.0 M. WIDE ROAD
5.0 M. WIDE ROAD
STORAGE
ROOM
A/C PANEL ROOM
+ SCADA
CONTROL ROOM
A/C ADMIN
CUM
LABORATORY
RO PERMEATE
STORAGE
TANK
RO REJECT
TANK 1500 M³
SECONDARY
RO
EVAPORATOR
TREATED
WATER SUMP
CAP.7,20,00000
LITER
ϕ56.0
RCC GSR AT
TTP SITE
75000 M³
CLARIFIED
WATER
TANK
8.0
95.0
SLUDGE
THICKNER
TANK
COLLECTION
TANK
UF REJECT
TANK
SLUDGE
DRYING BED
GREEN
BELT
METERING & PLC ROOM
HT SUBSTATION
HT SUBSTATION
SUBSTATION
AT STP SITE
GATE
5.0 M. WIDE ROAD
5.0 M. WIDE ROAD

PROJECT TITLE	USE OF TREATED STP WATER FROM NOIDA STP IN NCTPP DADRI POWER PLANT		
CLIENT	NCTPP DADRI		
CONSULTANT	PURANIK BROTHERS CONSULTING ENGINEERS 61, Nilkanth App. Surendra Nagar,RPTS Road NAGPUR 440015, EMAIL: puranikbrothers@gmail.com		
	NAME	DATE	DWG. TITLE:
DRAWN	SM	01.11.24	TTP LAYOUT DRAWING
DESIGNED	NNP	01.11.24	
CHECKED	NB	01.11.24	
APPROVED	RPD	01.11.24	

RELEASED FOR				
INFORMATION		DEPT - CIVIL	JOB NO -	SHEET: 01 OF 01
SUBMISSION	✓	DRAWING NO. PB-C74875-ABI-01-SUR-003		SIZE : A3
APPROVAL				REVISION
CONSTRUCTION				0

QA Testing Laboratories Pvt. Ltd.

(Govt. Approved Testing Laboratories)

B-76, Sector-64, Gautam Buddha Nagar, Noida-201301 (Uttar Pradesh)

Tel.: +91-120-4133953 • Mobile: +91-8287945370 • E-mail: admin@qatestinglaboratories.com

Website : www.qatestinglaboratories.com

CIN : U51100UP2018PTC108293 • GSTIN : 09AAACQ5609C1ZN

Quality Assurance

M5400913IN

An ISO 9001:2015, 14001:2015, 45001:2018 & ISO/IEC 17025:2017 Accredited & BIS Recognised Laboratory

TEST CERTIFICATE

(This Certificate is not Valid without Hologram)

Test Report No	: QAL/WT/24112900483	Issue Date	: 06/12/2024
Sample Name:	: STP WATER	Sample Received On	: 29/11/2024
Sample Code	: -	Reference No	: NA
Issued To	: NTPC FOR NCTPP Dadri.	Sampling Date	: 29/11/2024
		Sampling Quantity	: 2 Ltr.
		Batch No./Lot No.	: NA
Sample Submitted By	: PURANIK BROTHERS	Date of Mfg.	: NS
Mfg. By	: NA	Date of Exp.	: NS
Sample Description	: Physical & Chemical Analysis Of Water Sample	Date of Starting	: 29/11/2024
Location	: 59 MLD STP AT SECTOR 50, NOIDA	Date of Completion	: 06/12/2024

S.No.	Test Parameters	Units	Results	Test Method
1	pH value at 25°C	-	7.65	IS:3025 P-11
2	Chemical Oxygen Demand (COD)	mg/l	40	IS:3025 P-58
3	Sulphate as SO4	mg/l	260.1	IS:3025 P-24
4	Biochemical Oxygen Demand (5 days at 27°C)	mg/l	12	IS:3025 P-44
5	Total Suspended Solids (TSS)	mg/l	6	IS:3025 P-17
6	Total Dissolved Solid (TDS)	mg/l	2135	IS:3025 P-16
7	Total Hardness as CaCO3	mg/l	508	IS:3025 P-21
8	Total Nitrogen	mg/l	6.42	IS:3025 P-34
9	Total Kjeldahl Nitrogen	mg/l	3.2	IS:3025 P-34
10	Alkalinity as CaCO3	mg/l	305	IS:3025 P-23
11	Chloride as Cl	mg/l	572.32	IS:3025P-32
12	Feacal Coliform	MPN/100 ml	Absent	IS :1622
13	Silica (as SiO2)	mg/l	0.1	IS 3025 P-35
14	Ammonia	mg/l	1.5	IS :3025 P-34
15	Fluoride (as F)	mg/l	0.089	IS 3025 P-60
16	Phosphate (as PO4)	mg/l	0.65	IS :3025 P-31

SAMPLE COLLECTED BY US

End of Report

Upendra Kumar
Technical Manager
Authorized By (Sign & Stamp):

Dilip Kumar
Quality Manager
Approved By (Sign & Stamp):

QA Testing Laboratories Pvt. Ltd.

(Govt. Approved Testing Laboratories)

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Tel.: +91-120-4133953 • Mobile: +91-8287945370 • E-mail: admin@qatestinglaboratories.com

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TEST CERTIFICATE

(This Certificate is not Valid without Hologram)

Test Report No	: QAL/WT/24112900484	Issue Date	: 06/12/2024
Sample Name:	: STP WATER	Sample Received On	: 29/11/2024
Sample Code	: -	Reference No	: NA
Issued To	: NTPC FOR NCTPP Dadri.	Sampling Date	: 29/11/2024
		Sampling Quantity	: 2 Ltr.
		Batch No./Lot No.	: NA
Sample Submitted By	: PURANIK BROTHERS	Date of Mfg.	: NS
Mfg. By	: NA	Date of Exp.	: NS
Sample Description	: Physical & Chemical Analysis Of Water Sample	Date of Starting	: 29/11/2024
Location	: 80 MLD STP at Sector 123 Noida	Date of Completion	: 06/12/2024

S.No.	Test Parameters	Units	Results	Test Method
1	pH value at 25°C	-	7.11	IS:3025 P-11
2	Chemical Oxygen Demand (COD)	mg/l	20	IS:3025 P-58
3	Sulphate as SO4	mg/l	81.9	IS:3025 P-24
4	Biochemical Oxygen Demand (5 days at 27°C)	mg/l	6	IS:3025 P-44
5	Total Suspended Solids (TSS)	mg/l	4	IS:3025 P-17
6	Total Dissolved Solid (TDS)	mg/l	1348	IS:3025 P-16
7	Total Hardness as CaCO3	mg/l	284	IS:3025 P-21
8	Total Nitrogen	mg/l	3.46	IS:3025 P-34
9	Total Kjeldahl Nitrogen	mg/l	1.8	IS:3025 P-34
10	Alkalinity as CaCO3	mg/l	130	IS:3025 P-23
11	Chloride as Cl	mg/l	417.37	IS:3025P-32
12	Feacal Coliform	MPN/100 ml	Absent	IS :1622
13	Silica (as SiO2)	mg/l	0.089	IS 3025 P-35
14	Ammonia	mg/l	0.92	IS :3025 P-34
15	Fluoride (as F)	mg/l	0.065	IS 3025 P-60
16	Phosphate (as PO4)	mg/l	0.46	IS :3025 P-31

SAMPLE COLLECTED BY US

End of Report

Upendra Kumar
Technical Manager
Authorized By (Sign & Stamp):

Dileep Kumar
Quality Manager
Approved By (Sign & Stamp):

Note: a) This report is not reproduced wholly or in partially and forbidden to be used as an evidence in the court of law and ought not be used in any advertisement media without our special permission in writing. b) The data reported in this TEST CERTIFICATE are valid at the time of and under the stipulated conditions of measurement and the test results are applicable to those items of product which have been tested and do not apply to the other products even though declared to be identical. c) Except by special arrangement, the test items will not be retained by the company not more more than one month. d) Report refers to the sample received by M/s QA Testing Laboratories Pvt. Ltd. e) This report is valid for the tested sample only.

TABLE 112: STATE-WISE AVERAGE INFLATION (CPI) - GENERAL

(Per cent)

State/Union Territory	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Andaman & Nicobar Islands	6.7	6.4	6.2	3.6	6.9	6.5	6.3	5.2	6.1	3.5
Andhra Pradesh	5.5	7.4	5.2	3.4	1.1	3.5	9.0	5.2	7.6	5.5
Assam	6.0	4.8	2.6	4.4	5.9	6.0	8.5	3.2	6.5	4.6
Bihar	6.7	4.5	3.9	2.7	3.9	2.2	7.3	3.8	5.7	5.8
Chandigarh	6.4	3.6	3.9	3.8	4.0	4.8	4.8	4.8	5.9	4.3
Chhattisgarh	6.4	6.8	3.5	2.7	2.4	2.5	8.0	4.2	4.7	3.4
Dadra & Nagar Haveli	4.3	5.3	5.6	2.8	1.8	4.7	4.2	6.9	6.4	6.5
Daman & Diu	7.0	9.2	5.0	6.5	-1.9	0.8	6.9	6.0	5.6	4.8
Delhi	5.6	4.9	5.3	4.8	2.7	3.7	3.3	5.4	4.0	2.6
Goa	6.5	4.7	5.1	3.8	2.6	4.3	6.9	4.2	3.2	3.0
Gujarat	5.5	4.9	5.1	2.6	2.5	3.7	5.9	4.9	6.9	5.7
Haryana	5.6	4.0	4.4	4.1	2.9	4.3	5.9	5.6	7.5	6.6
Himachal Pradesh	6.2	4.3	4.6	4.6	0.5	3.5	5.2	6.0	4.5	5.0
Jammu & Kashmir	6.0	6.0	5.3	6.8	5.3	4.3	6.3	6.5	6.3	4.2
Jharkhand	4.7	5.1	5.3	3.9	3.7	4.1	6.0	3.7	6.1	5.7
Karnataka	6.5	6.7	4.4	3.0	3.3	5.6	5.8	5.6	5.5	5.8
Kerala	7.3	4.2	4.3	6.0	4.9	6.1	6.0	4.0	5.8	5.0
Lakshadweep	7.6	5.1	1.1	5.0	5.7	8.3	11.1	2.3	7.3	3.6
Madhya Pradesh	5.5	4.4	3.5	2.7	3.5	5.5	7.6	5.9	7.5	4.4
Maharashtra	5.5	4.4	4.4	4.1	3.1	4.4	6.8	5.2	7.3	5.1
Manipur	4.7	5.1	10.1	12.4	8.7	6.9	6.7	1.4	1.4	10.0
Meghalaya	12.3	7.5	0.6	1.5	2.2	2.8	9.2	3.0	4.3	4.1
Mizoram	6.5	4.0	2.1	1.9	2.5	5.1	10.3	5.7	7.9	4.5
Nagaland	10.5	5.8	5.1	3.4	6.0	3.8	4.8	4.8	6.0	3.4
Odisha	6.8	6.4	4.9	2.2	2.6	4.6	7.9	3.1	6.0	6.5
Puducherry	6.9	8.4	1.3	2.3	4.2	6.2	8.4	4.8	6.2	5.3
Punjab	5.7	3.5	4.4	3.7	3.8	5.0	5.3	4.4	6.1	5.5
Rajasthan	6.6	5.7	5.4	3.2	2.3	5.3	4.4	4.2	6.9	6.4
Sikkim	6.2	7.0	9.9	4.0	3.9	3.2	7.1	6.6	6.8	3.5
Tamil Nadu	6.2	5.7	3.9	4.9	3.7	5.7	7.5	5.2	6.0	5.4
Telangana	4.7	5.5	6.1	3.9	2.6	4.5	8.7	6.4	8.6	6.4
Tripura	13.0	2.7	4.1	3.4	4.3	6.3	9.5	3.2	7.0	6.1
Uttar Pradesh	5.9	4.1	4.3	2.4	3.8	5.9	6.1	5.1	7.1	5.8
Uttarakhand	5.0	3.2	3.7	3.9	4.0	5.9	8.1	5.1	6.5	5.6
West Bengal	5.4	3.5	5.0	3.7	5.1	4.6	8.7	5.1	7.1	4.5
All India	**5.9**	**4.9**	**4.5**	**3.6**	**3.4**	**4.8**	**6.2**	**5.5**	**6.7**	**5.4**

Notes: 1. Data for Arunachal Pradesh is not available.

2. For calculating State-wise Consumer Price Index (CPI) inflation in 2020-21 the average CPI Index for ten months has been taken due to unavailability of CPI data for the months of April and May 2020.

3. Figures for Jammu & Kashmir from October 2019 pertain to combined Union Territories of Jammu & Kashmir and Ladakh (erstwhile State of Jammu & Kashmir)

Source: Ministry of Statistics and Programme Implementation, Government of India.

//True Copy//

Gmail

Adarsh Tripathi <adarsht912003@gmail.com>

OA.1002/2018 titled as Abhisht Kusum Gupta vs. State of Uttar Pradesh & Ors. | Regarding service of Affidavit to place on record additional documents/information being filed on behalf pf Respondent No.12 (NTPC Limited)

1 message

Adarsh Tripathi <adarsht912003@gmail.com> Tue, Mar 11, 2025 at 5:45 PM
To: Pradeep Misra <pradeepmisra@yahoo.com>, Narenderpalsingh@gmail.com, advpriyankaswami@gmail.com, ceo@noidaauthorityonline.com, Abhisht_103@yahoo.com, sanjivsenoffice@gmail.com

Ma'am/Sir,

We are concerned for NTPC Ltd. in the captioned matter. Please find attached herewith the Affidavit being filed before the Hon'ble NGT in the subject matter.

Please be in receipt of the same.

Final Affidavit Abhisht Kusum 11032025.pdf

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Adarsh Tripathi
Advocate on Record, Supreme Court of India
G-34, Basement, Lajpat Nagar-3, New Delhi-110024
9090416535 / 9425308454