

## Minutes of Meeting # 9

**Project** : Development of STPs and TTP Projects along with associated infrastructure in Mathura under Hybrid Annuity based PPP mode, Uttar Pradesh

**Date** : 18<sup>th</sup> December 2018

**Location** : Office of the Project Manager, Drainage and Sewerage Unit, UPJN, Mathura

### List of Attendees:

1. Mr. Maharaj Singh, Project manager (D&SU), UP Jalnigam, Mathura
2. Mr. Deepak Chauhan, Project Manager (E&M), UP Jal Nigam, Agra.
3. Mr. Waseem Athar, Project Engineer, UP Jal Nigam, Mathura.
4. Mr. Sumit Project Engineer (E&M), UP Jal Nigam, Agra
5. Mr. A.Srinivasan, General Manager – MACE
6. Mr. M. Jaya krishnan, Project Engineer, MACE
7. Mr. A.D.Gupta, Addl.GM, Triveni
8. Mr. Sunil Bhargava, Process Engineer, Triveni
9. Ms, Kajal Verma, Asst. Manager- Triveni

### Agenda of the Meeting:

- To discuss and approve Basic Engineering Package and Phase I drawings for 20 MLD TTP at Trans Yamuna

The following points were discussed based on the observations made and replies provided by MWMPPL at earlier occasions (refer earlier minutes of meeting and compliance resolution sheets provided by MWMPPL) during the meeting held on 18<sup>th</sup> December 2018 at UPJN office Mathura.

Sr. No.	Description	Action by	Remarks
<b>A</b>	<b>General Comments of TTP</b>		
1	Selection of the proposed Pressure Disc Filtration system compared to the technologies listed in the CA agreement and submission of supporting documents.  MWMPPL informed that NMCG already given clearance to go ahead with pressurized disc filter during the meeting held on 28 <sup>th</sup> November 2018.	MWMPPL	MWMPPL to provide the reference of existing similar municipal wastewater treatment plants preferably in India along with its performance certificates, upstream system details, etc pertaining to municipal wastewater treatment plant within 15 days i.e on or before 1 <sup>st</sup> January 2019

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	<p>As informed during the meeting they have provided the list of reference of existing plants.</p> <p>MACE and UPJN informed that almost all the references are pertaining to industrial effluent and the municipal wastewater reference provided by MWMPPL is no where comparable to the plant capacity envisaged in this project. Hence references should be provided for the similar capacity from the municipal wastewater treatment plants with the similar influent and effluent characteristics along with its upstream quality and treated effluent quality and its performance certificates.</p> <p>UPJN informed that conditional approval of BEP of 20 mld TTP shall be provided subject to submission of providing reference of existing similar municipal wastewater treatment plants along with its performance, upstream system details, etc subject to the satisfaction of UPJN and MACE</p>		<p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
2	<p>Proposed Pressurized Disc Filter system: The design criteria such as hydraulic loading rate, TSS loading rate, backwash rate, filter media area need to be indicated in the design calculations.</p>	MWMPPL	<p>MWMPPL agreed to provide the design criteria as requested in the revised document and drawings based on the data sheet provided by the vendor on or before 20<sup>th</sup> December 2018. However, the same will be revised during detail engineering stage based on finalization of vendor</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
3	<p>Comparison of pressurized disc filter and other filters mentioned in CA,</p>	MWMPPL	<p>MWMPPL agreed to incorporate the same in the revised document</p>

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	<p>MACE informed that even though comparison is provided there is no specific reason, advantage and disadvantage for the selection of pressurized disc filter.</p> <p>MWMPL informed that the life of UF system will be increased and frequent failures if any will be avoided.</p> <p>UPJN informed to provide the same in the comparison including life cycle cost analysis</p>		<p>which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
4	<p>Standby for electromechanical units</p> <p>MACE informed that there is no standby provided for the disc filter.</p> <p>MWMPL informed that there is no moving part in disc filter and UF membrane and hence there is no standby required</p> <p>MWMPL informed that each filter will have different pod and in each unit there will be one pod will act as standby.</p> <p>MWMPL also informed that sufficient spares shall be kept in stores for disc filter and UF membrane system in order to replace immediately if required.</p> <p>MACE and UPJN informed that the same need to be mentioned in the process description</p>	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
5	<p>Design margin of 15%</p> <p>MACE and UPJN informed that there is no mention about the design margin considered for the input characteristics (TSS, BOD, COD, Fecal coliforms) in any of the document.</p> <p>MWMPL informed that the system provided will be able to take care.</p>	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>

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	However MACE and UPJN informed that the same should be explicitly mentioned in the relevant documents		
6	<p>Ascertained characteristics of STP effluent</p> <p>MACE informed that there is no test reports attached to the submission for ascertaining the characteristic of influent to TTP as per CA.</p>	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
7	<p>Disc filtration system backwash flow:</p> <p>MACE informed that there is no document evidence from the vendor regarding backwash flow requirement and also based on the performance of existing similar plants as agreed during last meeting held on 7<sup>th</sup> December 2018</p>	MWMPL	<p>MWMPL informed that they have received the information from the vendor and the same will be mentioned in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
8	<p>Reason for changing UF system from pressurized system to submerged vacuum system</p> <p>MACE informed that there is no comparison and the reason for selecting the submerged vacuum system as agreed during the last meeting held on 7<sup>th</sup> December 2018.</p> <p>MWMPL informed that they are already operating two plants of similar capacities with the submerged vacuum system the past 5 years and found no issues till date.</p> <p>UPJN informed that the same need to be mentioned in the technical description in order to understand the the reason in future</p>	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
9	<p>CIP drain, B/W drain – disposal of waste salts or any other hazardous waste</p> <p>MACE informed that there is no mention about the type of waste</p>	MWMPL	<p>MWMPL informed that there is no hazardous waste to be generated from the proposed system and there is no need of disposal land exclusively for hazardous waste and agreed to incorporate the</p>

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	expected, its quality, quantity, etc as agreed during the meeting held on 7 <sup>th</sup> December 2018 in order to identify the suitable disposal land by UPJN		same in the revised document which will be submitted on or before 20 <sup>th</sup> December 2018  MACE and UPJN to review and provide the status of compliance and observations if any
10	<p>Pump capacity Margin:</p> <p>MACE informed that there is parallel operation of pumps are envisaged and hence as requested by IOCL margin of 10% to be considered while selecting the pump.</p> <p>MWMPL informed that sufficient margin will be considered at all flow conditions depending upon the pump manufacturer's catalogue whether it is parallel operation or single pump operation. UPJN requested to mention the same in the revised document</p>	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
11	<p>Mixing of UF treated water with RO treated water:</p> <p>MACE informed that as agreed during the last meeting held on 7<sup>th</sup> December 2018 for the provision of static mixer to blend the UF treated water and RO treated water prior to discharging the same in to treated water storage tank, there is no reference / mention in the submitted documents for the same.</p>	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
12	MACE informed that there is no reference specified in the submitted documents and assurance for minimum sewage intake flow of 14.5MLD to WSP plant and 16.00MLD to UASB.	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
13	MACE informed that elaborative operational philosophy to showcase the net output does not reduce even	MWMPL	MWMPL agreed to incorporate the same in the revised document

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	<p>incase of one system fails out of 6 nos is not clearly indicated in the submitted document as agreed during the last meeting held on 7<sup>th</sup> December 2018</p> <p>MWMPL informed that they will be able to provide the same only after approval of P&amp;ID</p> <p>MACE &amp; UPJN informed that the control philosophy should be submitted along with P&amp;ID</p>		<p>which will be submitted on or before 24<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
14	<p>RO feed tank capacity: MACE informed that as per mass balance diagram there is no excess water available for backwash (0.26 MLD) in RO feed tank.</p>	MWMPL	<p>MWMPL agreed to revised the mass balance diagram which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
15	<p>Disc filter feed pump Just one pump of 30.5 mld is very risky as indicated in the previous discussions also. Due consideration needs to be given during O&amp;M how the downstream processes will be affected. At these flow rates, industry norm shall be followed considering other projects of similar requirements.</p>	Info	<p>MWMPL informed that the head requirement is very little i.e 15 M and hence there is no need to reduce the pump capacity. Head will be mentioned in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
16	<p>Basket strainer is shown on MFD... please include specification of feed strainer in microns in the process description MWMPL informed that as per their process it is not required however to adhere the CA requirement, the same has been mentioned and the micron size will be 100.</p> <p>MACE and UPJN informed that the size need to be changed to less than 50 micron</p>	MWMPL	<p>MWMPL agreed to incorporate the strainer size in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>

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	MWMPL did not agree for the same		
17	MACE informed to include the process summary of each of the sub-treatment systems need to be included in the technical description	MWMPL	<p>MWMPL informed that already incorporated and agreed to revisit and do the needful in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
18	MACE requested to indicate clearly the flow rates of each cell/module/unit in disc filter, UF and RO system	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
19	MACE informed that description of shutdown philosophy of UF system is very generic. Requested to provide similar to SBR description	MWMPL	<p>MWMPL agreed to incorporate the same in the control philosophy which will be submitted on or before 24<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
20	RO skid: MACE requested to reconfirm the Avg flux rate of 16.6 LMH mentioned in the submitted document since the same is mentioned as maximum limit of 17 LMH as per CA	Info	MWMPL reconfirmed that the flux rate (16.6 LMH) specified in the document is correct
21	MACE requested to clarify the meaning of "depth filtration" for pressurized disc filter mentioned in the comparison and to confirm whether it is the process according to the process description and the advantage over RGF	MWMPL	<p>MWMPL confirmed that they will relook into the comparison and do the needful in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
22	MACE informed that maintenance efforts mention in the comparison sheet is very generic description, it requires a clear life cycle costs along with side by side performance	MWMPL	MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20 <sup>th</sup> December 2018

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	comparison data. Since this is a new technology in India market for ULB clients.		MACE and UPJN to review and provide the status of compliance and observations if any
23	<p>MACE requested to confirm how much shock loadings the system can handle with certain degree of redundancy?.</p> <p>MWMPL informed that there is no shock loading is expected in terms of flow. However agreed to incorporate the shock loading due to quality.</p>	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
24	MACE requested to indicate the actual plant performance data of the ULB plants as a reference. The backwash sequence of building up the pressure range needs to be indicated along with its frequency of cleaning.	MWMPL	MWMPL informed that they will try to get the performance certificates and its data. However, the timeline is not indicated by them. The time line for providing this data need to be confirmed by MWMPL along with the revised document
25	MACE informed that It is not clear in regard to O&M advantages of pressurized disc filter. There is no separate settling chambers built within unlike disk filters which give both settling zone at the bottom if there are process upsets and filtration zone.	MWMPL	<p>MWMPL informed that there is no settling zone at the bottom and agreed to incorporate the O&amp;M advantage in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
26	MACE informed that any comparison shall show advantages and disadvantages among all the three systems. It has been given only advantages and please indicate disadvantages also compared to the other two.	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>
27	<p>Blending and storage of STPs out let water:</p> <p>MACE informed that It is not clearly indicated in the process calculation how the existing channels are combined and whether is there any new channel will be constructed as informed in the technical description and the process calculation for the</p>	MWMPL	<p>MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20<sup>th</sup> December 2018</p> <p>MACE and UPJN to review and provide the status of compliance and observations if any</p>



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	same based on existing site condition need to be included		
28	MACE informed that in process flow diagram, the inlet quantity for UF feed tank and outlet quantity to UF system are same. However, the backwash for disc filter is also indicated from the same tank, but there is no excess water available for this purpose	MWMPL	MWMPL agreed to revised the mass flow diagram which will be submitted on or before 20 <sup>th</sup> December 2018  MACE and UPJN to review and provide the status of compliance and observations if any
29	MACE informed that the inflow from STPs should be changed from 30.5 MLD into 30.5 MLD + disc filter backwash 0.6 MLD and the channel sizing, blending and disposal tank sizing, pump capacity are to be revised accordingly	MWMPL	MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20 <sup>th</sup> December 2018  MACE and UPJN to review and provide the status of compliance and observations if any
30	MACE informed that the UF backwash (air line, CIP and backwash inlet) are shown in the delivery side of UF permeate pump in the process flow and mass balance diagram. The same need to be revised on suction side of the pump	MWMPL	MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20 <sup>th</sup> December 2018  MACE and UPJN to review and provide the status of compliance and observations if any
31	MACE informed that the rate of dosing is not indicated in the mas balance diagram.	Info	MWMPL informed that the rate of dosing are already incorporated in the technical description and process sizing calculation.
32	MACE informed that Though the Concessionaire provided the type of UF system in the technical description, the same shall also be indicated in the PFD cum mass balance diagram. The number of module per cell shall also be indicated.	Info	MWMPL did not agree for the same
33	Cartridge filter - there is no indication /reference in the mass balance diagram regarding RO CIP tank and flushing pump as mentioned in design calculation and reason for providing dosing prior to cartridge filter	MWMPL	MWMPL agreed to incorporate the same in the revised document which will be submitted on or before 20 <sup>th</sup> December 2018  MACE and UPJN to review and provide the status of compliance and observations if any

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34	MACE requested to indicate the HRT and volume of tank in the PFD	MWMPL	MWMPL did not agree for this as this is already provided in process sizing calculation

UPJN informed that if there is any discrepancy in the minutes of meeting content then the same need to be raised by the concern person within a day from the date of receipt of MOM. Otherwise it is deemed that the minutes of meeting is accepted by everyone and there should not be discussion / apprehension on the same in the upcoming meetings.

MWMPL

UPJALNIGAM

PROJECT ENGINEER