

Minutes of Meeting # 4

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

Date : 24th November 2018

Location : Office of the M/S. Mathura Wastewater Management pvt limited, Noida

List of Attendees:

1. Er. Deepak Chauhan, Project Manager, UP Jal Nigam, Agra.
2. Er. Waseem Athar, Project Engineer, UP Jal Nigam, Mathura.
3. Mr. Satish Kamaraju, Senior Process Engineer, MACE
4. Mr. A.Srinivasan, General Manager – MACE
5. Mr.A.N.Singh, COO, Triveni
6. Mr.K.C.Agarwal, GM, Triveni
7. Mr. Kailash chand Dhawan, AGM - Triveni
8. Mr.Sukla, Triveni
9. Mr.Yogesh Mann-AGM-Triveni
10. Mr.Deep Sagar Tiyaagi, Dy.Manager, Triveni
11. Mr.Manoj Kumar Gupta, Manager, Triveni

Agenda of the Meeting:

- To discuss and approve Basic Engineering Package and Phase I drawings as discussed and accepted during the meeting held on 16th November 2018 at Mathura

The following points were discussed during the meetings held on 24th November 2018 at the Office of M/s. Mathura Wastewater Management pvt limited, Noida.

Sr. No.	Description	Action by	Remarks
1.	MWMPL informed that there are additional comments received on the BEP which is not expected as per the discussion held in earlier occasions. MACE informed that they provided observations on the submitted drawings and documents based on the available information in the earlier drawings and the additional points are the deficiency and clarifications required in the updated documents submitted on 17 th November 2018		
2	During the discussion M/s.MWMPL took a stand that they will restrict their discussion especially on 30 MLD STP and 20 MLD TTP only to the points agreed and as per minutes of meeting held on 5 th November 2018 at NMCG office. Also, they informed that Project engineer review is not mandatory when the IIT is already approved the STP BEP. MACE and UPJN informed that as per CA it is mandatory for the project engineer to review and provide their observation irrespective of the outcome of from each of the entities whether		

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	the document / drawing is already approved by either of two and the observations shall be intimated to the concessionaire through UPJN.		
3	MACE would like to record their disappointment on the jeopardizing the environment by creating a havoc suddenly by the intrusion of the one of the members of M/s MWMPPL during the meeting unnecessarily which was going on smoothly until prior to this disruption. Further MACE would like to bring it to the notice of all the stakeholders that the quorum of the meeting need to be maintained at all meetings and discussions, instead of disrupting the proceedings of the discussion abruptly jeopardizing the team work effort among the stakeholders.		
A	BEP of 30 MLD NEW STP at Masani		
1	<p>MACE informed that all the points discussed on 24th, 25th October 2018, 5th November 2018 and 16th November 2018 were reviewed. The observation provided by MACE were categorized in to four categories (attached at the bottom of the minutes) namely, 1. Adhered, incorporated and accepted. 2. Partially adhered and require further inputs 3. Not adhered and to be incorporated 4. Accepted based on the earlier discussion had with NMCG and UPJN with a remark to provide applicability based on the field conditions and operational strategy</p> <p>Some of the points are already adhered by MWMPPL and the following deficiency / short coming points are discussed during the meeting and way forward arrived to approve the same once the revised documents incorporating the observations are submitted.</p> <p>MACE informed that the categorization can be identified from the observations sent to all stakeholders in all the submitted documents and drawings.</p>	Info	
A1	Observations made on R0 drawings and documents		
2	Observation on Minimum flow factor of 0.5	MWMPPL	MWMPPL agreed to include the write up of the same in the process description

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	MACE informed that as per MWMPL, this factor is taken from CPHEEO reference and the general practice. Further to this, MACE requested MWMPL to document this applicability as per field conditions also since the flows in the canals through the year vary with less flows expected during summer season and future sewer network connections, which will have an impact on the flow generation which in turn have an impact on operation of the pumping stations and the STP at their optimum levels.		
3	<p>Observation on Flow split and measurement between 30 MLD new STP and 6.8 MLD existing STP since the inlet structure including grit chamber is designed for cumulative flow.</p> <p>MACE pointed out the inconsistency between the various documents submitted such as process description, Mass balance flow diagram, Layout, etc.</p>	MWMPL	MWMPL agreed to include the same in all relevant document and assured the consistency in future submission
4	<p>Observation on Standby for mechanical screens.</p> <p>MACE informed that even though the manual standby is accepted by NMCG during the meeting held on 5th November 2018, they wanted to emphasize the need for having a redundancy with the risk factors such as the spare parts would take longer lead times and technicians have to be coming from various locations during the break-down. It is significant when it comes to day to day operations on manual until the single mechanical unit become functional. Also requested MWMPL to provide the operational strategy in case of failure of mechanical screen in the process description.</p>	MWMPL	MWMPL informed that the functioning of one mechanical unit will be very reliable and the critical spare parts will be kept on site and they assured that the manual unit will be operated with more manpower and the resources so that no untoward incident will occur.

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5	<p>Observation on standby for mechanical Grit Separator Unit</p> <p>-Same as above-</p>	MWMPL	Same as above
6	<p>Observation to include Anoxic zone / Fill in the SBR Basin and additional air requirement due to this</p> <p>MACE informed that as per MOM dated 5th November 2018, MWMPL should confirm the anoxic zone requirement from their technology provider / vendor. Also explained the necessity of anoxic zone /fill in SBR technology.</p> <p>MWMPL informed that there is no anoxic zone is required for the technology provided by them. Also accepted the requirement of Anoxic fill time to minimize the filamentous growth.</p> <p>MACE informed that considering the size of tank, anoxic mixer to be provided during Anoxic fill time in order to ensure the proper conditioning of sludge for the next batch process and also to ensure the minimizing the filamentous growth during various operating temperature conditions.</p> <p>MWMPL informed that they are not agreeing for the provision of anoxic mixer .</p> <p>UPJN informed that the same will be finalized after discussion with NMCG within 2 days.</p> <p>During the meeting, UPJN informed the situation to NMCG and requested to provide the way forward. NMCG informed to call back later to take the decision</p>	UPJN & MWMPL	<p>UPJN to follow up with NMCG and inform all the stakeholder about NMCG point of view.</p> <p>Upon receipt of the decision from NMCG, MWMPL to incorporate the changes in all document within 2 days and submit for approval.</p>
7	<p>Observation: CCT detention time during decant peak flow.</p> <p>MACE requested to clearly indicate the disinfection scenarios for peak flows and average flows by calculating decant rate per SBR Cycle within the allocated time of 60 minutes per cycle. Also requested</p>	MWMPL	<p>MWMPL informed that detention time of 30 minutes shall be considered only for average flow. MWMPL agreed to consider minimum 10 mg/l dosage instead of 5 mg/litre and ensure the variable chlorine dosage rate to handle the peak flow.</p>

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	to consider variable chlorine dosage rates as per CPHEEO especially for SBR effluent.		
8	Observation: Sludge digestion rate MACE requested to examine the sludge digestion rates of waste activated sludge for year-around temperatures. Also requested to indicate the SRT calculation in the document	MWMPL	MWMPL agreed to increase the SRT of SBR basin considering the temperature of 15 deg and to include the calculation in the document
9	MACE informed that the access road shown in the lay-out is not adequate to access the treatment units	MWMPL	MWMPL agreed to incorporate the access for the left-out units in Revision 3
A2	Observation on Process design calculation and Mechanical calculation – Revision 1		
10	Observation: Treated effluent quality in process design calculation and mechanical calculation MACE requested to indicate the values as per KPI i.e it should be shown less than the values listed. for example, less than 30 mg/l.....	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
11	Observation: Process design calculation and mechanical calculation – reference clause 1.0 MACE requested to clearly indicate the flow streams of 30 MLD and 6.8 MLD	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
12	Observation on recycled flow concentration – Reference clause 8.1 MACE informed that the recycled flow from the Thickener on BOD and TSS figures are very low and requested to indicate the reference used for these values. Gravity Thickeners shall have higher concentrations than proposed. Further the solid capture of 95% considered is on the higher side and requested to follow 90% as per CPHEEO manual	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
13	Observation: SBR basin sizing – Reference clause 8.2 MACE informed that due to the variation in sl.no.8, the SBR basin size need to be revisited and corrected	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
14	Observation on Reference: 8.2 - SBR basin sizing	MWMPL	MWMPL agreed to revise the documents and drawings accordingly

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	MACE requested to indicate MLSS concentration corresponding to the SWD of SBR.		
15	<p>Observation: Reference: 8.2 - SBR basin sizing</p> <p>MACE informed that the mentioned HRT of 13.19 hrs. is worked out based on average flow of 30 MLD without considering the recycled flow. Requested to modify the HRT based on total flow (average flow and recycled flow) which is approximately 12.7 hrs.</p>	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
16	<p>Observation: SBR basin volume</p> <p>Volume is mentioned as 4121.58 instead of 4121.85 m³. MACE requested to correct the same and modify the slight changes to the SBR basin dimensions.</p>	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
17	<p>Observation: SBR basin sizing</p> <p>MACE informed that due to temperature variation, there are more possibilities for froth formation and it will get spilled over with a free board of 0.5 m. MACE requested to consider raising the freeboard to 1.0 m</p>	MWMPL	<p>MWMPL informed that necessary anti foaming dosing shall be carried out to avoid spilling over.</p> <p>MACE requested to indicate the same in the revised documents and drawings accordingly</p>
18	<p>Observation: Reference: 8.3 - Oxygen Demand</p> <p>MACE informed that in the calculation that the total recycle flows from Section 8.2 need to be added and the respective calculation to be revised.</p>	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
19	<p>Observation: Reference: 8.4 - Air Requirement</p> <p>MACE informed to cross check the accuracy of the figure considered for atmospheric pressure at altitude H and also indicate units</p> <p>MACE also requested to check Average dissolved oxygen saturation concentration value based on observation on atmospheric pressure at altitude H and also indicate units</p>	MWMPL	MWMPL agreed to cross check and revise the documents and drawings accordingly
20	Observation: Reference: 8.4 - Air Requirement	MWMPL	MWMPL agreed to provide the reference from the vendor.

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	MACE requested to consider the diffuser fouling factor of 0.9 as per Metcalf & Eddy as indicated in the document.		
21	<p>Observation: Reference: 8.4 - Air Requirement</p> <p>MACE requested to correct the total air required based on site conditions for 25 degrees C since the difference is working out to more than 3%</p>	MWMPL	MWMPL agreed to provide the calculation in excel sheet to cross verify
22	<p>Observation: Reference: 8.4 - Air Requirement</p> <p>MACE requested to reconsider the two working blowers for 30 MLD Four Basin SBR System, which is very less and requested to increase the number of units which would help in O&M especially the spare parts would take longer lead times and technicians have to be coming from different locations during the break-down.</p>	MWMPL	<p>MWMPL informed that they will not consider this suggestion.</p> <p>UPJN agreed for the same</p>
23	<p>Observation: Reference: 8.5 - Thickener Feed Pumps-Sludge Wasting</p> <p>MACE informed that TSS assumed here indicates 50 mg/l TSS in the effluent while the design requirement is 100 mg/l and requested to cross check the SRT calculations also for 100 mg/l TSS leaving the system.</p>	MWMPL	MWMPL agreed to cross check and revise the documents and drawings accordingly
24	<p>Observation: Reference: 10.3 - Centrifuge:</p> <p>MACE requested to indicate the supernatant concentrations in the table.</p>	MWMPL	MWMPL agreed to indicate the same in the revised document.
25	<p>Observation: Reference: 10.4 - Polyelectrolyte Dosing Tank & Pumps:</p> <p>MACE pointed out the inconsistency of the solution strength considered in process calculation (0.25%) and process description (0.1%) and requested to correct the same</p>	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
26	<p>Observation: Reference: 10.4 - Polyelectrolyte Dosing Tank & Pumps:</p>	MWMPL	MWMPL informed that the same shall be carried out during Design detailed engineering stage and the same shall be mentioned in the document

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	MACE requested to evaluate the turndown capacities for operation for flows discussed in the previous sections.		
A3	Observation on Mass balance flow diagram – Revision 1		
27	<p>Observation: GRIT Separator outlet to 30 MLD STP:</p> <p>MACE requested to show flow split after grit separator and requested to include another box to show flows and concentrations going to existing Masani STP (6.8 MLD).</p> <p>Also requested to indicate Design Avg Flows and Design Peak Flows in every table</p>	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
28	<p>Observation: SBR Basing Inlet:</p> <p>MACE requested to change the table based on the comments given the Process Design Calculation Sheet</p>	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
29	<p>Observation: Total recycled flow:</p> <p>MACE requested to update the table based on the process calculation sheet comments</p>	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
30	<p>Observation: Thickener supernatant:</p> <p>MACE requested to revise the thickener supernatant BOD and TSS values based on process calculation sheet comments</p>	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
31	MACE requested to include general note Indicating the percentage removal expected/designed for in all the units shown.	MWMPL	MWMPL agreed to revise the documents and drawings accordingly
A3	Process description – Revision 1		
32	MACE requested to include summary of all process calculations for each of the sub-treatment units need to be listed here, such as flows (in, out, recycle, waste), treatment expected from each of these sub-systems.	MWMPL	MWMPL agreed to incorporate to the maximum possible extent in the revised process description
33	<p>Observation: Reference: clause 3.1.1</p> <p>MACE requested please indicate new Masani STP= 30 MLD & Existing Masani STP = 6.8 MLD</p>	MWMPL	MWMPL agreed to incorporate to the maximum possible extent in the revised process description

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34	Observation: Reference :clause 3.1.1.1 MACE requested to indicate the names of pumping stations and their respective flows reaching the Masani STP Headworks	MWMPL	MWMPL agreed to incorporate to the maximum possible extent in the revised process description
35	Observation: Reference :clause 3.1.1.2 MACE informed that sluice Gates are required for manual screen for diversion/isolation from automatic screens.	MWMPL	MWMPL agreed to incorporate the same
36	Observation: Reference :clause 3.1.1.3 MACE requested to indicate clearly if 6.8 MLD is included here.	MWMPL	MWMPL agreed to incorporate the same
37	Observation: Reference : clause 3.1.1.3 MACE pointed out that the statement of "Two organic pumps are installed at the grit chamber to return the sewage back in the grit chamber" is not clear and requested to clearly specify the process description of all the flows, In-Out-Return streams within each treatment stage here.	MWMPL	MWMPL agreed to incorporate to the same
38	Observation: Reference :clause 3.1.1.4 MACE pointed out in the mass balance sheet shows the flow split is upstream of grit chambers where as in process description it is indicated in the downstream of grit chambers. Requested to clarify	MWMPL	MWMPL agreed to incorporate to the revise mass balance sheet
39	Observation: Reference :clause 3.1.1.4 MACE requested to provide additional Parshall flume in the manual bypass channel. It is not clear how 6.8 MLD is measured and split of this stream on automatic basis.	MWMPL	MWMPL agreed to provide flow meter for 6.8 MLD stream and the same shall be incorporated in the revised drawings and documents
40	Observation: Reference :clause 3.1.2.1 MACE requested to indicate Proposed Masani STP instead of Masani in the table	MWMPL	MWMPL agreed to incorporate the same
41	Observation: Reference :clause 3.1.2.1 MACE requested to indicate Average and Peak Flows clearly showing the recycle streams with inlet and outlet design criteria. It is always an engineering	MWMPL	MWMPL agreed to incorporate to the same

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	practice to show the process parameters and treatment achieved in the SBRs.		
42	Observation: Reference :clause 3.1.2.1 MACE requested to show each cycle time and no. of cycles per reactor per day and include Anoxic Fill Stage (Please refer to meeting minutes on BEP meetings held till date)	MWMPL	MWMPL agreed to incorporate the same
43	Observation: Reference :clause 3.1.2.1 MACE requested to indicate clearly each phase with descriptions of process treatment of parameters.	MWMPL	MWMPL agreed to incorporate the same
44	Observation: Reference :clause 3.1.2.1 MACE requested to elaborate the general description needs with design cycle times and the description of process in each of these phases.	MWMPL	MWMPL agreed to incorporate the same
45	Observation: Reference :clause 3.1.2.1 MACE informed at this stage, Anoxic Fill is not given according to the discussions earlier. Please confirm.	MWMPL	MWMPL agreed to incorporate the in line with the NMCG decision as discussed in the process design calculation
46	Observation: Reference :clause 3.1.2.1 MACE requested to indicate the type of aeration system selected. Air requirements and selection of blowers etc. This is a process description report where the summary of process calculations need to be listed step by step for all processes.	MWMPL	MWMPL agreed to incorporate the same
47	Observation: Reference :clause 3.1.2.1 MACE enquired does the D.O control is implemented here by on-line measurement for 2.0 mg/l and blowers discharge is adjusted using VFDs?	MWMPL	MWMPL agreed to incorporate the same
48	Observation: Reference :clause 3.1.2.1 MACE requested to include Settle Time and expected SVIs with the selected MLSS.	MWMPL	MWMPL agreed to incorporate the same
49	Observation: Reference :clause 3.1.2.1 MACE requested to indicate the no. of decant cycles per day and flow rate of	MWMPL	MWMPL agreed to incorporate the same

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	each decant at AVG flows and PEAK flows Per Decant Cycle.		
50	Observation: Reference :clause 3.1.2.1 MACE requested to indicate the Decanter type, size and method of operation which is essential to be finalized during basic engineering stage	MWMPL	MWMPL agreed to incorporate the same
51	Observation: Reference :clause 3.1.2.1 MACE requested to indicate the sludge wasting quantities and sludge waste duration. Pump capacities need to be included.	MWMPL	MWMPL agreed to incorporate the same
52	Observation: Reference :clause 3.1.3 MACE requested to indicate the disinfection system designed under avg flows and peak flows with respective HRTs along with treated effluent requirements. Indicate the Standards followed in sizing the Chlorination System.	MWMPL	MWMPL agreed to incorporate the same
53	Observation: Reference :clause 3.1.4.1 MACE requested to indicate the process description with the quantities of sludge generated, thickened, pumping frequency and rates need to be shown here from process calculation sheet.	MWMPL	MWMPL agreed to incorporate the same
54	Observation: Reference :clause 3.1.4.1 MACE informed that Extended Aeration activated sludge to be thickened from 0.8% to 3% is very conservative no. Consider alternate mechanical dewatering systems such as belt filter press.	MWMPL	MWMPL denied the statement and confirmed they will provide only one gravity thickener and necessary operational methodology shall be provided in the O&M manual
55	Observation: Reference :clause 3.1.4.1 MACE requested to verify this statement on gravity feed of the supernatant to SBR Chamber, by cross checking with the process calculations showing the SWDs of SBR and Gravity Thickener.	MWMPL	MWMPL agreed to incorporate the same
56	Observation: Reference :clause 3.1.4.2 MACE requested to indicate flow loadings and no of pumps along with concentrations need to be indicated.	MWMPL	MWMPL agreed to incorporate the same
57	Observation: Reference :clause 3.1.4.3	MWMPL	MWMPL agreed to incorporate the same

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	MACE informed that 0.1% is not consistent with process calculation sheet and requested to modify		
58	Observation: Reference :clause 3.1.4.3 MACE informed that aerobic thickener is proposed in this section and not discussed in the process calculation sheet.	MWMPL	MWMPL agreed to incorporate the same
59	Observation: Reference :clause 3.1.4.4 MACE requested to indicate the dosing system with concentrations, rates and volumes need to be indicated here. Standby pumps need to be provided for both dosing and solution preparation are required.	MWMPL	MWMPL agreed to incorporate the same
60	Observation: Reference :clause 3.1.5 MACE requested to provide the brief description for each facilities listed shall be provided	MWMPL	MWMPL agreed to incorporate the same
A4	Layout – Revision 2		
61	MACE requested to show the landscaping in the buffer zone/set back area.	MWMPL	MWMPL agreed to incorporate the same
62	MACE requested to include storm water management system within the STP site	MWMPL	MWMPL agreed to incorporate the same
63	MACE requested to connect with walkways from the road to staff quarters of all types.	MWMPL	MWMPL agreed to incorporate the same
64	MACE requested to indicate the parking area for staff quarters as per planning standards	MWMPL	MWMPL agreed to incorporate the same
65	MACE requested to connect road to the workshop	MWMPL	MWMPL agreed to incorporate the same
66	MACE requested to connect the parking area to the road. Parking space is inadequate for the visitors and working staff	MWMPL	MWMPL agreed to incorporate the same
67	MACE requested to indicate the road widths	MWMPL	MWMPL agreed to incorporate the same
68	MACE requested to cross check the width of the walkways on the SBR basins is sufficient to do maintenance of decanter equipment and also to read the instrumentation such as D.O and flows. The air valves would be taking significant space along with air pipes. Need to have adequate space for them.	MWMPL	MWMPL agreed to ensure and provide the details during Design detail engineering stage

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69	MACE enquired how the grit is collected and dumped into the truck. Is there any truck access	MWMPL	MWMPL agreed to incorporate the same
70	MACE requested to indicate the existing structures such as inlet structure and show the demolition hatching to them.	MWMPL	MWMPL informed that the same is already included in the Key plan and the same shall be submitted as a sperate drawing indicating the existing STPs, other structures, etc.
71	MACE informed that the PLC room is located in the corrosive environment from the Chlorine Room and from preliminary treatment and requested to consider another area for No.29 PLC Room.	MWMPL	MWMPL agreed to incorporate the same
72	MACE informed that in the layout, Sludge drying area is mentioned where as there is no process description provided and the necessity of the same. The method of drying, sludge intake arrangement, sizing calculation are to be provided. Also requested to clarify the necessity of the same when centrifuge is envisaged.	MWMPL	MWMPL informed that the sludge drying area is to store the dried sludge. MACE requested to provide the shed with cover for temporary storage of dried sludge
73	MACE recommend extending the road to form a T junction near sludge drying area for taking reverse for heavy vehicles where the turning radius is not sufficient at the access area of individual building roads.	MWMPL	MWMPL agreed to incorporate the same
74	MACE recommend having a road extended to gravity thickener for vehicle access during major overhauling	MWMPL	MWMPL agreed to incorporate the same
75	MACE requested to show the CCT Effluent Pipe	MWMPL	MWMPL informed that the same is already included in the Key plan and the same shall be submitted as a sperate drawing
76	Recommend to clearly identify the new STP layout boundary	MWMPL	MWMPL informed that the same is already included in the Key plan and the same shall be submitted as a sperate drawing indicating the existing STPs, other structures, etc.
	Conclusion on 30 MLD STP at Masani	MWMPL	MWMPL agreed to submit the final documents and drawings incorporating the above changes within 2 days for providing approval
B	20 MLD Tertiary treatment plant		
77.	MACE informed that they are ready to discuss the observations on tomorrow i.e 25 th November 2018 as instructed by CE of UPJN Agra.	MWMPL	MWMPL informed that their process engineer is not in station and they will incorporate the observations and

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			send the revised version within 2 to 3 days and then if required further meeting can be decided.
C	Pumping stations, Pump head calculations and I&D structures		
78	MWMPL agreed to go through the observations sent on any one set of observations and then the same will be followed in other cases	Info	
C1	Observation on Masani MPS documents		
C1a	General		
79	MACE informed that there is no specific mention about the design capacity of the I&D structure, receiving chamber, sump, etc. and the same need to be specified.	MWMPL	MWMPL agreed to include the same in the revised version
80	MACE informed that the adequacy checking for I&D structure, receiving chamber, and sump is totally missed out which need to be part of BEP submission	MWMPL	MWMPL agreed to include the same in the revised version
81	MACE informed that design flow from the Nala & gravity pipeline to be specified	MWMPL	MWMPL agreed to include the same in the revised version
82	MACE informed that existing electro mechanical details along with the layout drawings need to be submitted based on condition assessment survey.	MWMPL	MWMPL agreed to include the same after completing the condition assessment survey
	Pumping Station		
83	MACE informed that Geotechnical Investigation report to be submitted	MWMPL	MWMPL agreed to include the same in the revised version if applicable
84	MACE informed that GA drawings for receiving chamber, sump, DG room (if provided), staff quarters (if provided) and I & D structure are to be submitted	MWMPL	MWMPL agreed to include the same in the revised version
	Piping layout		
85	MACE informed that Condition assessment report for all existing components to be submitted	MWMPL	MWMPL informed that condition assessment survey shall be initiated only after announcement of effective date and agreed to include the same in the revised version
86	MACE informed that Rehabilitation methodology for existing facilities are to be submitted	MWMPL	MWMPL agreed to include the same in the revised version after completion of condition assessment survey

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87	MACE requested to provide site grading and site development work with respect to the HFL (if specified in SoW)	MWMPL	MWMPL agreed to include the same in the revised version
	I&D Structure		
88	MACE requested to provide I & D design calculation	MWMPL	MWMPL agreed to include the same in the revised version
89	MACE requested to submit GA drawings for I&D structure	MWMPL	MWMPL agreed to include the same in the revised version
90	MACE requested to carryout / submit the Flow measurement for each nallah / stream	MWMPL	Based on the discussion, MWMPL will measure the nallah flow in the presence of UPJN and PE from 27 th November 2018 onwards and submit the same upon completion
91	MACE requested to submit Condition assessment report for all existing components	MWMPL	MWMPL informed that condition assessment survey shall be initiated only after announcement of effective date and agreed to include the same in the revised version
92	MACE informed that Rehabilitation methodology for existing facilities are to be submitted	MWMPL	MWMPL agreed to include the same in the revised version after completion of condition assessment survey
93	MACE requested to submit P & ID drawings (As per "Control configuration diagram with minimum mandatory instrumentation, process control and electrical control elements" in CA) and control philosophy.	MWMPL	MWMPL informed that the same is ready for submission and shall be submitted on 24 th November 2018
94	MACE requested to submit survey drawing and hydraulic flow calculation for I & D gravity sewer	MWMPL	MWMPL agreed to include the same in the revised version
95	MACE requested to submit the Layout drawing for I&D	MWMPL	MWMPL informed that the same is ready for submission and shall be submitted on 24 th November 2018
C1a	P&ID - PXD-1305-104-11-001 – Revision 0 & 1		
96	MACE informed that there is no mention about the type of screen in the drawing which should be in line with the concession agreement requirements. In Revision 1 drawing, only the manual screen is indicated and requested to provide as per Scope of work clause A2-2-(xi) manual and mechanical screen need to be provided	MWMPL	MWMPL agreed to include the same in the revised version
97	MACE informed that the electrical, instrumentation, control and automation	MWMPL	MWMPL agreed to include the same in the revised version

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	<p>works are provided without considering the SLDs & Control configuration diagram which are annexed to schedule 1. The electrical, instrumentation, control and automation works should be finalised in line with the concession agreement requirements. Further it is informed that the following corrections to be carried out in Revision 1.</p> <p>a) The gate for the proposed weir in Masani Nala (Raal Canal) shall also be provided with actuator</p> <p>b) The automatic gates need to be provided at the entry of screen channel to stop/regulate the flow into pumping station during operation and maintenance of screen and DWF. Existing gate also to be motorized</p> <p>c) The drawing need to be resubmitted duly showing all information on the various instruments to be provided at these I&D location along with the control and telemetry schematic diagrams</p> <p>d) As per Control configuration diagram of concession agreement motorized valve shall be provided in pump header line also.</p>		
98	MACE informed that the electrical actuator need to be provided for all valves and gates.	MWMPL	MWMPL agreed to include the same in the revised version
99	MACE informed that the redundant level sensor in the sump should be hooked up to the instrument junction box at field and further hooked up to the Plant PLC as mentioned in the control scheme & proposed philosophy as part of concession agreement	MWMPL	MWMPL agreed to include the same in the revised version
100	MACE informed that all field instruments signals should be hooked up to the instrument junction box at field and further hooked up to the Plant PLC as mentioned in the control scheme & proposed philosophy as part of concession agreement	MWMPL	MWMPL agreed to include the same in the revised version
101	MACE informed that instrument power supply to all field instruments signals to be derived from separate power supply unit of adequate VA rating with redundancy	MWMPL	MWMPL agreed to include the same in the revised version

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Sr. No.	Description	Action by	Remarks
102	MACE informed that ultrasonic open channel level/flow measurement for weir Up/ down stream flow measurement has to be provided as mentioned in the control scheme & proposed philosophy as part of concession agreement	MWMPL	MWMPL agreed to include the same in the revised version
103	MACE informed that in the piping route drawing -PXD-1305-103-15-002, It is observed that rising main from Vrindavan IPS confluence in Masani drain. But, in the P&ID drawing, it is shown as rising main confluence after existing manual screen. Requested to correct the pipe routing drawing	MWMPL	MWMPL agreed to include the same in the revised version
104	MACE informed that even though the pump head is specified in the SOW, the same need to be reconfirmed by way of hydraulic calculation as per site condition and if necessary, the same need to be modified after getting the concurrence from UPJN. However, the pump head shall be reconfirmed and corrected in the P&ID if required based on Head calculation PXD-1305-104-11-005	MWMPL	MWMPL agreed to include the same in the revised version
	SLD - PXD-1305-104-14-002 – Revision 0		
105	MACE informed to reconfirm the rating of transformers and LT I/C breakers on secondary side of Transformer after submission and approval of transformer sizing calculations.	MWMPL	MWMPL agreed to revise the same after submission of transformer sizing during design detail engineering
106	MACE requested to reconfirm the rating of DG set, and DG set I/C breaker after submission and approval of DG sizing calculations.	MWMPL	MWMPL agreed to revise the same after submission of DG sizing during design detail engineering
107	MACE informed that the AMF relay should sense for both utility supply failure and as well as under voltage & single phasing conditions and start the DG set.	MWMPL	MWMPL agreed to include the same in the revised version
108	MACE requested to reconfirm the adequacy of drive motor rating final selection of equipment – pump, screen, valve, etc. depending upon the make and model.	MWMPL	MWMPL agreed to revise the same after selection and submission of equipment – pump, screen, valve, etc. and include the same in the revised version
109	MACE informed to provide feeder & load to be considered for the electric actuators for manual screen, inlet and	MWMPL	MWMPL agreed to include the same in the revised version

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Sr. No.	Description	Action by	Remarks
	outlet gates and weir across canal also as mentioned in the control scheme & proposed philosophy as part of concession agreement.		
110	MACE informed that power supply to PLC should be through suitable 1: 1 ratio isolation transformer and through Surge Protection Device of appropriate type and class.	MWMPL	MWMPL agreed to include the same in the revised version
111	MACE informed that all pumps should be provided with Local push button station(LPBS).	MWMPL	MWMPL agreed to include the same in the revised version
112	MACE informed to provide the spare feeders of minimum one each of the highest & lowest rated feeder, besides 32 Amps feeder.	MWMPL	MWMPL agreed to include the same in the revised version
113	MACE informed that both the EB and DG breakers should be with microprocessor-based releases for O/C, S/C & E/F.	MWMPL	MWMPL agreed to include the same in the revised version
	Electrical load list - PXD-1305-104-14-001 – Revision 0		
114	MACE informed to reconfirm the breaking K.W value need after finalizing the vendor and equipment adhering the technical specification provided as part of Concession agreement.	MWMPL	MWMPL agreed to revise the same after finalizing the vendor during design detail engineering
115	MACE informed that MWMPL should adopt slow speed pump for pumps having capacity higher than 5 KW	MWMPL	MWMPL agreed to include the same in the revised version
116	MACE informed that S/D starters should be of Closed Transition type	MWMPL	MWMPL agreed to include the same in the revised version
117	MACE informed that rating of switch and control gear should be as per type-2 coordination chart and MPCBs shall be used for motor protection feeders instead of MCCBs as per clause 1.49 of Schedule 10 Part D of concession agreement.	MWMPL	MWMPL agreed to include the same in the revised version
118	MACE informed to consider feeder & load to be considered for the electric actuators for manual screen, inlet and outlet gates and weir across canal as per " Control configuration diagram with minimum mandatory instrumentation, process control and electrical control elements" in Concession Agreement.	MWMPL	MWMPL agreed to include the same in the revised version
119	MACE informed to mention the peak and average flow of all the pumps in the load list need to be rechecked. It is found that in place of lean flow, average flow is mentioned. However, concessionaire	MWMPL	MWMPL agreed to include the same in the revised version

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Sr. No.	Description	Action by	Remarks
	should modify in concurrence with design calculation.		
120	MACE informed that as per para 1.4.9 of Schedule 10 (Part C) Mechanical Equipment General and Particular Specifications, the power rating of motor shall be at least 125 % of the maximum power requirement	MWMPL	MWMPL agreed to confirm the same during design detailed engineering stage
121	MACE informed that all motors shall be of high efficiency IE 3 type	MWMPL	MWMPL agreed to include the same in the revised version
122	MACE requested the concessionaire to follow as per para 2.8.2 of Schedule 10 (Part C) Mechanical Equipment General and Particular Specifications, the power rating of submersible pump motor shall be the larger of the following i) The maximum power required by the pump from zero discharge to zero head. ii) 115% of the power required at the duty point. Considering the combined efficiency (motor & pump). iii) System resistance curve shall be applicable within 5% of the duty point.	MWMPL	MWMPL agreed to include the same in the revised version
123	MACE informed that the motor efficiency shall not be less than 92 %	MWMPL	MWMPL agreed to include the same in the revised version
124	MACE mentioned that SD starters shall be of closed transition type	MWMPL	MWMPL agreed to include the same in the revised version
125	MACE informed that all motors shall by default comply with clause 1.35 of Schedule 10 (Part D) Electrical System General and Particular Specifications,	MWMPL	MWMPL agreed to include the same in the revised version
126	MACE informed that the load list shall also include the power demand requirement for the following a) All actuators b) All instruments c) UPS d) Battery charging set	MWMPL	MWMPL agreed to include the same in the revised version
127	MACE informed that the general lighting and small power requirement of various buildings and common areas to include in the load list	MWMPL	MWMPL agreed to include the same in the revised version
128	MACE informed to provide Air-conditioning for PLC & SCADA rooms	MWMPL	MWMPL agreed to include the same in the revised version
129	MACE informed that the details of Telecom & SCADA equipment are to be provided	MWMPL	MWMPL agreed to include the same in the revised version

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Sr. No.	Description	Action by	Remarks
	Proposed pipe routing drawing -MPS to STP - PXD-1305-101-15-002 – Revision 0		
130	MACE informed to indicating the road level in the pipe routing drawing. The concessionaire to clarify whether separate topo survey drawing will be submitted /revised pipe routing drawing will be submitted incorporating the requested details.	MWMPL	MWMPL agreed to include the same in the revised version
	Site layout - PXD-1305-104-12-001 – Revision 0		
131	MACE informed that the size of DG set area, HT panel room and Transformer area shall be confirmed subsequently with respect to adequacy of panel / equipment space, clearances on all sides as per IS / CEIG norms.	MWMPL	MWMPL agreed to include the same in the revised version
132	MACE requested to incorporate Footpath, external electrification, earth filling, greenery, plantation and diversion & extension of storm water drainage network as requested in SoW-Point-C Other activities to be undertaken.	MWMPL	MWMPL agreed to include the same in the revised version
133	MACE requested to indicate Internal road, masonry compound ,and internal drainage	MWMPL	MWMPL agreed to include the same in the revised version
134	MACE informed that the location of the proposed weir and the points of flow measurement at upstream and downstream of the weir to be shown in the drawing	MWMPL	MWMPL agreed to include the same in the revised version
135	MACE informed to provide Site grading plan with retaining structure (if required) to be shown in the drawing considering the HFL as mentioned in the scope of work. Facility wise finished level need to be shown clearly.	MWMPL	MWMPL agreed to include the same in the revised version
136	MACE requested to clarify the legend all facilities (Screen chamber, PLC room, LT panel room, HT panel room, sump cum pumphouse) will be constructed new. The concessionaire to clarify and confirm	MWMPL	MWMPL agreed to include the same in the revised version
137	The layout has to be revised duly showing the mechanical screen	MWMPL	MWMPL agreed to include the same in the revised version
138	MACE informed to confirm the size of DG set area, HT panel room and Transformer area shall be confirmed subsequently with respect to adequacy of panel /	MWMPL	MWMPL agreed to include the same in the revised version

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Sr. No.	Description	Action by	Remarks
	equipment space, clearances on all sides as per IS / CEIG norms.		
139	MACE informed to provide footpath, external electrification, earth filling, greenery, plantation and diversion & extension of storm water drainage network shall be incorporated as requested in SoW-Point-C Other activities to be undertaken.	MWMPPL	MWMPPL agreed to include the same in the revised version
140	MACE informed that Internal road, masonry compound ,and internal drainage to be shown	MWMPPL	MWMPPL agreed to include the same in the revised version
141	MACE informed that the location of the proposed weir and the points of flow measurement at upstream and downstream of the weir to be shown in the drawing	MWMPPL	MWMPPL agreed to include the same in the revised version
142	MACE informed to provide Site grading plan with retaining structure (if required) to be shown in the drawing considering the HFL as mentioned in the scope of work. Facility wise finished level need to be shown clearly.	MWMPPL	MWMPPL agreed to include the same in the revised version
143	As per the legend all facilities (Screen chamber, PLC room, LT panel room, HT panel room, sump cum pumphouse) will be constructed new. The concessionaire to clarify and confirm	MWMPPL	MWMPPL agreed to include the same in the revised version
144	MACE informed that the layout has to be revised duly showing the mechanical screen	MWMPPL	MWMPPL agreed to include the same in the revised version
145	Topo survey drawing - PXD-1305-104-13-001 Revision 0		
146	MACE informed that the existing weir top level, size not shown in the drawing. Please include	MWMPPL	MWMPPL agreed to include the same in the revised version
147	MACE informed to HFL in the drawing	MWMPPL	MWMPPL agreed to include the same in the revised version
148	MACE informed that as per the scope of work "Desilting of drain to extend of 100m upstream side from the mouth of tapping" slit depth at the drain also need to be assessed.	MWMPPL	MWMPPL agreed to include the same in the revised version
149	MACE informed to show Pipe dia from inlet chamber to wet well.	MWMPPL	MWMPPL agreed to include the same in the revised version
150	MACE informed that IL & WL of Masani drain need to show in the drawing both at upstream and down stream	MWMPPL	MWMPPL agreed to include the same in the revised version
	System configuration - PXD-1305-104-16-003 Revision 0		

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Sr. No.	Description	Action by	Remarks
151	MACE informed that the I/O shall also be with redundancy.	MWMPL	MWMPL agreed to include the same in the revised version
152	MACE informed that the system shall also collect and process data either by interfacing with SCADA or by interfacing the communication from numerical relays/intelligent devices of electrical power system also	MWMPL	MWMPL agreed to include the same in the revised version
153	MACE requested to indicate the details of the number of cores and mode of OFC shall be indicated	MWMPL	MWMPL agreed to include the same in the revised version
154	MACE informed that the drawing shall include the note stating that the all component/devices shall conform to the technical requirement as per concession agreement.	MWMPL	MWMPL agreed to include the same in the revised version
154	MACE informed that the drawing shall include the note stating that the make of all component/devices shall conform to the technical requirement as per concession agreement.	MWMPL	MWMPL agreed to include the same in the revised version
155	MACE informed that in order to have more reliability, redundancy, speed and bandwidth it is preferred to have OFC backbone link between Masani STP and associated facilities apart from GPRS communication network.	MWMPL	MWMPL agreed to include the same in the revised version
156	MACE informed that the I/O and power modules shall have circuitry to protect the system from electrical surge and discharge.	MWMPL	MWMPL agreed to include the same in the revised version
157	MACE informed that all module rake must provide two individual power supply from two independent power sources.	MWMPL	MWMPL agreed to include the same in the revised version
	Process description - PXD-1305-104-11-006 Revision 1		
158	MACE requested to elaborate the description of the location and operation sequence of the gates during SWF,DWF & maintenance shall be more elaborated with respect to I&D arrangement at Masani I&D and Raal canal I&D.	MWMPL	MWMPL agreed to include the same in the revised version
159	MACE requested to clarify the capacity of each source as listed below and confluence point in Masani MPS need to be clearly discussed. 1. Masani sub drain 2. Raal Canal 3. Vrindavan IPS 4. Sewer network	MWMPL	MWMPL agreed to include the same in the revised version

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Sr. No.	Description	Action by	Remarks
160	MACE informed that the process description need to narrate the design capacity of weirs, inlet chamber, and screen chamber. The design capacity cannot be same for all facilities, need to be verified Based on confluence point of rising main & gravity sewer	MWMPL	MWMPL agreed to include the same in the revised version
	Pump head calculation PXD-1305-104-11-005 – Revision 0		
161	MACE request to indicate the Velocity during peak, average and lean flow in the rising main to be indicated in the design.	MWMPL	MWMPL agreed to include the same in the revised version
162	MACE requested to Resistance coefficients "K" shall be considered as per CPHEEO manual (latest)/Indian standard (IS 2951 Part 2) .	MWMPL	MWMPL agreed to include the same in the revised version
163	MACE informed to show assumption i.e TWL of Masani STP (Assume) .However, it has to verified after finalization Masani STP HFD drawing.	MWMPL	MWMPL agreed to include the same in the revised version
164	MACE informed to calculate For Cast Iron, Ductile Iron and Mild Steel Pipes lined with cement mortar or Epoxy the C value to be considered as 140	MWMPL	MWMPL agreed to include the same in the revised version
165	MACE informed to Head for lean flow pump to be included in the calculation and the same shall be considered as per requirement.	MWMPL	MWMPL agreed to include the same in the revised version
	Hydraulic calculation :PXD-1305-104-11-003 Revision 1		
166	MACE mentioned that FGL in design sheet is mentioned as 167.00, whereas in drawing it is mentioned as 170.23. Please clarify and correct	MWMPL	MWMPL agreed to include the same in the revised version
167	MACE informed that TWL of drain in design sheet is mentioned as 165.86, whereas in site layout drawing and it is mentioned as 165.56. Please clarify and correct	MWMPL	MWMPL agreed to include the same in the revised version
168	MACE informed that WL of sump to be corrected (level error)	MWMPL	MWMPL agreed to include the same in the revised version
169	MACE informed that Masani drain also need to be shown in the HFD drawing	MWMPL	MWMPL agreed to include the same in the revised version
	MACE informed that Confluence point of Vrindavan IPS rising main need to be shown	MWMPL	MWMPL agreed to include the same in the revised version
170	MACE informed that as per the layout drawing, there exist 2 no. manual screen (90°) at entry of the chamber, manual screen (1W+1S) , screen chamber, gate	MWMPL	MWMPL agreed to include the same in the revised version

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Sr. No.	Description	Action by	Remarks
	valve and pipe from chamber to well(not shown in the drawing). Head loss calculation should include all/ as per revised proposal. Please clarify and correct		
	Process design and mechanical design calculation PXD-1305-104-11-002 Revision 0		
171	MACE informed that the design of the Manual screen channel , inlet chamber need to be redesigned considering the following points, 1. WL level at the Masani drain & top level of existing or proposed weir 2. IL of Masani drain after desilting 3. Considering proposal for increase in wall height of the inlet chamber at I&D work above HFL and also considering age & installation of new mechanical screen. It will not be viable to utilize the existing structure , it is better to design and construct a new inlet & screen chamber as per the standard. 4. The design capacity cannot be same for all facilities, need to be verified based on confluence point of rising main & gravity sewer	MWMPL	MWMPL agreed to include the same in the revised version
172	MACE informed to Kindly provide assumptions for arriving at the peak flow	MWMPL	MWMPL agreed to include the same in the revised version
173	MACE informed that Design calculation for mechanical screen to be included	MWMPL	MWMPL agreed to include the same in the revised version
	CCTV PXD-1305-104-16-004 Revision 0		
174	MACE requested to provide The additional Cameras recommended to be installed to cover the Existing STP 6.8 MLD (WSP) at Masani (Vide comment No. E&IC-02 in drawing No. PXD-1305-101-16-004- Rev- 00 - CCTV & EPAX block diagram for 30 MLD STP at MASANI Zone, Mathura) also needs to be connected in the PLC room of 30 MLD STP	MWMPL	MWMPL agreed to include the same in the revised version
175	MACE informed that Cameras need to be installed in the Existing STP 14 MLD (WSP) and 16.5 MLD (UASB) at Trans Yamuna to be connected in the PLC room of 20 MLD TTP	MWMPL	MWMPL agreed to include the same in the revised version
	MACE informed that in some of the pumping stations the location of the NVR, POW switch etc., are shown in DG	MWMPL	MWMPL agreed to include the same in the revised version





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Sr. No.	Description	Action by	Remarks
	room instead of PLC room. It should be similar in all pumping stations either in DG ROOM / PLC room or in both		
176	MACE informed that As all the camera outputs from all IPS / MPS of the respective zone have to be viewed on screen & monitored from the workstations in the administrative offices at MASANI STP and Trans- Yamuna STP the number of channel that the NVR at these administrative offices shall be enhanced adequately with provision of a minimum of 20 % for future additional camera provisions.	MWMPL	MWMPL agreed to include the same in the revised version
	Conclusion on all associated infrastructure	MWMPL	MWMPL agreed to submit the final documents and drawings incorporating the above changes within 2 to 3 days for providing approval to the maximum possible extent and the remaining points will be mentioned under hold and shall be incorporated during design detail engineering stage after completion of flow measurement, conditional assessment survey and other field investigations as necessary

MWMPL

UPJALNIGAM

PROJECT ENGINEER

	Submitted/ Actions on PE comments complied by the concessionaire, accepted by PE and point closed
	not submitted/Actions on PE comments not complied by the concessionaire and point open
	Actions on PE comments partially complied by the concessionaire and point open
	Closed after discussion