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Schedules

Schedule B Special Conditions

- (A) **“Concession Period”**: means ___ years from the Commencement Date and ending on the Termination Date including Post Closure period of ___ years beginning from ___ years from Commercial Operations Date (COD)
- (B) **“Post Closure Period”**: means the period during which the Project Facility is completely utilised for disposal of Waste supplied by the Municipal Body and the Project Facility has to be closed for further disposal of Waste and the Project Facility has to be monitored as per the provisions of the MSW Rules (M&H) 1998. The Post Closure period shall commence from the end of ___ year and ending on the ___ year.

(C) **Performance Guarantee:**

The Developer towards due performance of its obligations as per the Terms of this Agreement shall provide to the Municipal Body a Performance Guarantee (in the form of a Fixed Deposit in a nationalised bank or a Bank Guarantee from a Nationalised Bank acceptable to the Municipal Body) equivalent to Rs___/= (Rupees _____ only) {equal to at least 10% of the estimated project cost} valid for the tenure of the Concession Period. The Performance Guarantee shall be released by the Municipal Body in the event of early Termination of this Agreement subject to the Termination not being as a result of Developer’s Event of Default and payment of all dues payable to the Municipal Body by the Developer prior to Termination.

(D) **Monitoring of Project Facility**

Construction phase:

- (i) Review the Design and Drawings related to the Development of the Project Facilities, submitted by the Developer.
- (a) The Developer shall make available the Design and detailed engineering Drawings, at own cost, for the construction/ procurement/ commissioning of the Project Facility to the Committee and Municipal Body within 15 days from the Commencement Date.
- (b) Within 7 days of provision of Design and Drawings by the Developer, the Committee and Municipal Body shall review the same.
- (c) The Municipal Body shall, within 15 days from the date of submission of Design and Drawings as detailed above, inform in writing the Developer of its approval/ denial to the modifications proposed by the Developer with adequate reasons. The Developer shall accordingly accommodate the observations of the Municipal Body.
- (d) If the Developer does not receive any communication, with regards to the proposed Design and Drawings within 15 days from the date of submission of

Design and Drawings to the Municipal Body, then Municipal Body shall be deemed to have accepted the Drawings and the Developer is entitled to proceed with the Construction works thereafter.

- (ii) Monitoring the Construction/ Installation of the treatment facilities and commenting on the compliance of the same with the construction requirements and bring any deviations to the attention of the Municipal Body.
- (iii) Conduct such tests as warranted to ensure the efficacy of the treatment facilities and make note of the same and submit reports on a fortnightly basis to the Municipal Body.
- (iv) Verify and approve issuance of Provisional Commissioning Certificate/ Final Commissioning Certificate to the Developer, upon satisfying that the Project Facility is capable catering to the Construction Requirements as per the provisions of this Agreement. In the event of approval of issuance of the former by the Municipal Body, a list of items pending for completion shall be appended thereto. (“Punch List Items”)
- (v) Verify and approve issuance of Final Commissioning Certificate upon completion of construction/ commissioning of the Punch List Items.
- (vi) Inform the Municipal Body as soon as reasonable on the occurrence of any Event of Default/ Force Majeure (as laid down later in the document) or any event that may have the potential to have a Material Adverse Effect on the Project Facility.
- (vii) To monitor the implementation plan with respect to the original implementation schedule (required to be submitted by the Developer) and submit to the Municipal Body a report on a fortnightly basis.
- (viii) Within 60 days of completion of the Construction Works and the Certification of the same by the Municipal Body as per the terms set forth in this Agreement, secure from the Developer two sets of As-Built Drawings, each to be submitted to the Committee and to the Municipal Body.

Operations and Maintenance:

The Committee shall undertake following activities related to the operations and maintenance of the Project Facility:

- (i) Collect information on a daily basis on the quantum of waste brought to the Project Facility from the Weighment Facility.
- (ii) Conduct calibration test of the Weighment Facility at least once in a period of six months.
- (iii) Conduct sampling, as detailed in Schedule, on the Waste at such intervals on a daily basis to ensure that only Inert Waste is brought to the Project Facility.
- (iv) Ensure that the capacity of the Project Facility is sufficient to cater to the quantum of Waste supplied to the Developer and undertake such construction/ development activities at the Project Site to cater to such future quantum of waste without any interruption in the operations of the Developer.
- (v) Conduct such tests to ensure conformance of the operations of the Project Facilities with the standards prescribed in prevalent Law/ Rules/ Statutes.
- (vi) Conduct such tests as laid down in Schedule for measurement of Performance Standards at an interval of not more than 15 days corresponding to the billing

- cycle and compile the results in the format prescribed to determine the penalty be recovered from the Developer for non-performance.
- (vii) Bring to the attention of the Committee of any potential Event of Default and / or any Force Majeure Event that is likely to have a material adverse impact on the Project Facility.
 - (viii) Carry out/ assist the Committee for such activities that the Committee may so direct from time to time
 - (ix) Review the O&M Plan submitted by the Developer from time to time and bring to the attention of the Committee deviations, if any from the same.
 - (x) In case of any dispute/ disagreement between the designated transporting agency and the Developer related to the Waste, then the Committee shall immediately inform the Municipal Body of the same and take steps as deemed necessary to resolve the dispute amicably without affecting the Project Facilities. However, if the resolution involves any financial burden on the part of the Municipal Body then the same shall be approved by the Municipal Body.

Post Closure Period:

- (i) The Committee shall review the Closure Plan to be submitted by the Developer as per the provisions of the Agreement.
- (ii) Submit a report to the Municipal Body on the same after suggesting modifications, if any.
- (iii) Assist the Developer in securing the permission of the Municipal Body for the Post Closure Plan.
- (iv) The Committee shall monitor the Closure of the Project Facility as per the Post Closure Plan submitted by the Developer and approved by the Municipal Body.
- (v) Submit a report on a six monthly basis to the Municipal Body on the observations of the periodic monitoring and comment on the compliance of the Project Facility with the statutory standards.

(E) Developer’s Specific Obligations

1. Construction:

- (i) Prepare the Design and detailed engineering Drawings for the construction/ procurement/ commissioning of the Project Facility and submit the same to the Committee and the Municipal Body within 15 days of the Commencement Date
- (ii) The Developer shall accommodate such remarks/suggestions that the Municipal Body shall have with regards to the Design and Drawings.
- (iii) The Developer at its own cost and expense make such arrangements for arranging finances as would be necessary for the development of the Project Facility in a timely manner. The Concessionaire shall submit its financing plan for the development of the Project Facility within 15 days of signing of this Agreement to the Committee and the Municipal Body.
- (iv) The Developer shall not commence Construction works before the formation of the Committee unless otherwise authorised to do so by the Municipal Body.

- (v) The Developer shall within 15 days from the approval/ deemed approval of the Municipal Body as detailed hereinabove, submit to the Municipal Body, the construction schedule to be adhered to by the Developer for the implementation of the Project Facility.
- (vi) The Developer undertakes to adhere to the Construction Schedule and complete the construction activities within the stipulated timeframe and achieves COD within the Scheduled Project Completion Date.
- (vii) The Developer shall on the 15th of every month, during the Construction Period, submit to the Committee, a progress statement indicating the progress achieved by the Developer over the previous month and the target for the next month as per the activities highlighted in the Construction Schedule to be submitted to the Municipal Body as per the terms set forth in this Agreement.
- (viii) The Developer shall before 15 days of the completion of the Construction of the Project Facilities notify the Committee in writing to conduct the requisite Tests required to certify the completion of the Project Facilities.
- (ix) The notification of the likely completion by the Developer would not construe as the achievement of Completion of the Construction works and only the Certification by the Municipal Body to that effect would construe the Completion of the Construction works.
- (x) All the Tests shall be conducted to ensure compliance with the Construction requirements. If the Tests are successful and the Project Facilities can be safely and reliably opened for operation, the Municipal Body shall issue the Commissioning Certificate upon approval by the Committee.
Provided, notwithstanding that certain works or things forming part of Construction Works are not complete, if following Tests the Committee determines that the Project Facilities can safely be commissioned and opened for operations, the Committee may approve issuance of Provisional Commissioning Certificate to the Developer. The Provisional Commissioning Certificate shall be accompanied by a list of items yet to be completed (“the Punch List items”). All the Punch List items shall be completed by the Developer within a period of 90 days from the date of issue of the same.
The Municipal Body shall, upon completion of the Punch List items, within 15 days issue the Final Commissioning Certificate to the Developer.
- (xi) If the Developer fails to complete the Punch List items as required under the Provisional Commissioning Certificate, then without prejudice to any other rights that the Municipal Body may have as per this Agreement, the Municipal Body shall have the option to undertake the said works by engaging the services of any third party, at the cost of the Developer and claim 130% of the amounts so incurred from the Developer for the same.
- (xii) The said Project Facilities shall be opened and ready for accepting the Municipal Solid Waste only after securing the Provisional Commissioning Certificate or the Final Commissioning Certificate as stipulated above.

2. Operations and Maintenance:

- (i) Acceptance of Municipal Waste

The Municipal Body shall endeavour to supply segregated Inert Waste to the Developer in quantities as indicated in

Schedule herein. The Developer shall be responsible at all times to accept the daily quantities of Waste.

In the event of inability of the Municipal Body to supply Waste, due to reasons attributable to the generators of Waste or due to reasons attributable to the transporting agency, the Municipal Body shall be obliged to supply Waste by collecting Waste from alternative sources or by engaging the services of any alternative transporter respectively.

Failure of Municipal Body to supply Waste continuously for a period of three consecutive days shall entitle the Developer to engage the services of any third party transporter to collect Waste from the generators of Waste and claim 120% of the cost involved in collection, transporting and segregation from the Municipal Body.

In the event the Developer is unable to hire the services of any third party transporter due to reasons attributable to the transporting industry per se, then the Municipal Body shall be obliged to pay to the Developer an amount that is equivalent to the manpower costs, operational costs other than interest payment and principal repayment for the period for which the Municipal Body has failed to supply the Waste (“Idling Charge”)

Idling Charge = Manpower Costs+ Operational Costs like lease payments for equipments, electricity charges, etc, except financing charges like interest payments and principal payments for the period of non-supply of Waste by the Municipal Body.

The Developer shall be penalised for any non- acceptance of the Waste, other than for events in this Clause herein above or due to Planned Maintenance for a period not more than 2 consecutive days, calculated as follows:

$$P_{NA} = 0.6 * Q_{AVG} * R_T$$

Where: -

P_{NA} : Penalty for Non acceptance

R_T : Rate per Tonne quoted by the Developer for the purpose of Disposal of the Waste

Q_{AVG} : Average Quantity of Waste supplied by the Municipal Body over the immediately preceding week

The Municipal Body shall have a liberty of recovering the penalty due from the Developer’ subsequent billing or by invoking the Performance Guarantee to the extents of the amounts due. In the event that the Performance Guarantee is invoked, the Developer shall within 15 days of such an event, replenish the Performance Guarantee to the stipulated amount. Failure on account of the Developer to do so shall be construed as an Event of Default on the part of the Developer.

(ii) Weighment of Waste supplied by Municipal Body

The Waste supplied to the Developer shall be weighed at the entry gate to the Project Facility. The Developer shall engage adequate labour to undertake this activity and ensure that the weighment of the Waste is done in a transparent mechanism.

The Committee/ Municipal Body shall have access to the Weigh Bridge at all times for inspection purposes and a register shall be maintained by the Developer to record the observations of the Committee/ Municipal Body, if any.

The Developer shall ensure that the Weigh Bridge is calibrated at frequencies not exceeding six months by an Independent Calibrator acceptable to the Committee

(iii) Landfill criteria for municipal solid waste

The Developer shall provide for a screening/ segregation facility at the Project Facility.

The screening/ segregation facility should be a mechanised facility with an ability to handle all types of Waste both dry as well as wet waste. The Developer can deploy partial mechanised segregation of the waste upon a written approval from the Municipal Body. The Waste other than the Inert Waste so segregated shall have to be separately stored in a separately demarcated area and handed over to the Municipal Body.

The Municipal Body undertakes to supply Waste in compliance of the Acceptability Criterion as detailed below:

Acceptability Criterion:

Random sampling shall be undertaken of the Waste that is being supplied by Municipal Body to ascertain the composition of the Waste supplied by Municipal Body. The sampling procedure, detailed herein *Schedule* is to be conducted for at least two Waste loads on a daily basis by a Committee/ Municipal Body representative and the observations of the same are to be recorded and produced before the Committee upon demand.

Acceptability Criterion= the ratio of Inert Waste to total waste shall not be less than 90%

If the Waste supplied by the Municipal Body to the Developer is found to be in deviation of the Acceptability Criterion, then the Developer shall deploy labour to segregate the same. The cost of deploying additional labour shall be separately recorded and initialled by the Committee representatives comprising the Developer representative as well as the Municipal Body representative. The Developer shall recover 120% of the amounts so spend by the Developer in segregating the Waste and transporting the rejects to the agency designated by Municipal Body and submit a bill in this regard.

3. Post Closure Period:

- (i) The Developer shall at least six months before the end of the active Operations period, submit a Post Closure Plan to the Committee and Municipal Body
- (ii) Carry out necessary modifications as may be desired by the Committee or the Municipal Body in compliance of the statutory standards.
- (iii) Undertake necessary activities to achieve and maintain compliance with the statutory standards from time to time with regards to the Post Closure Period.

(F) Payments to the Developer

1. Payment Terms

- (i) The Developer shall open a separate account with the nationalised bank mentioned in Clause 7.1 of this Agreement for the purpose of credit of Post

Closure payments from the scheduled payments to be made by the Municipal Body to the Developer.

- (ii) The Municipal Body hereby undertakes to pay the Developer an amount as calculated herein below in lieu of services rendered towards the operation and maintenance of the Project Facility for the acceptance of the Waste supplied by the Municipal Body;

$$A = R_T * Q_{Act} * (100 - P) - P_C$$

Where;

A: Amount payable as per the terms of the Agreement

R_T: Rate per Tonne of Waste (as agreed between the Developer and the Municipal Body subsequent to the bidding process)

Q_{Act}: Quantity of waste accepted by the Developer as per provisions of the Agreement

P: Performance Parameter as determined by the procedure laid down in Schedule

P_C: Post Closure charge to be deducted from scheduled payments for catering to the expenses during the Post Closure Phase.

$$P_C = 10\% * R_T * Q_{Act} * (100 - P)$$

- (iii) The Municipal Body shall make available the requisite funds to the credit of the Developer as per the Payment Mechanism detailed in Clause 7.1

2. Post Closure Payments

- (i) The Developer shall be entitled to receive over the entire Post Closure Period, equal payments spread over the Post Closure Period on a quarterly basis.
- (ii) The Municipal Body shall at the end of every quarter beginning from the end of the active operations period credit such amounts on arrears basis to the Developers account as mentioned in Clause 7.1 of this Agreement
- (iii) In the event of non-performance of obligations/ instructions issued by Municipal Body from time to time, the Municipal Body shall have a right to with hold such Post Closure Payments to the Developer.
- (iv) Upon repeated defaults by the Developer of its Post Closure obligations, the Municipal Body shall have the right to terminate the agreement and with hold all amounts in the credit of the Post Closure Account and the Developer shall not make any claims whatsoever for any amounts related thereto.

(E) Termination Payments

- (i) Due to Events of Default

The Termination Payments that shall be payable to the Developer shall be governed by the following table:

(This has been worked out for a seven-year contract period)

Year	Investment in non-movable assets *	Mun. Body EoD	Dev. EoD
Upto Construction	X	120	70
At COD	Say 100		
Yr 1	85.71	102.86	60.00
Yr 2	71.43	85.71	50.00
Yr 3	57.14	68.57	40.00
Yr 4	42.86	51.43	30.00
Yr 5	28.57	34.29	20.00
Yr 6	14.29	17.14	10.00
Yr 7	0.00	0.00	0.00

* Investment in Non-movable assets shall mean those assets that the Developer has deployed for the Project Facility that cannot be utilised if the Project Facility has to be wound up. For eg. a shed for equipments/ office, construction of plant, etc.

Where as assets like vehicles. Which can be utilised by the Developer even if the Project Facility is shut down, would not qualify as non-movable assets.

(ii) **Due to Force Majeure Events**

Upon Termination of this Agreement due to Force Majeure Event, Termination Payment shall be made to the Developer by the Municipal Body in accordance with the following:

- (i) If Termination is due to a Force Majeure Event, described under Clause 9.1 sub-clause (i) to (v), no Termination Payments shall be made to the Concessionaire by the Municipal Body, but the Developer shall be entitled to receive and appropriate the proceeds of any amounts receivable under the Insurance Policies.
- (ii) If Termination is due to the occurrence of any Force Majeure Event as described under Clause 9.1 sub-clause (vi), (vii) or (viii), Municipal Body shall pay to the Developer, Termination Payment equal to 110% of the Investment in non-movable assets made by the Developer, as on Termination Date ascertained from the table 1 herein above, and as certified by an independent firm of chartered accountants mutually agreed upon and appointed by the Parties for the purpose. The costs for the expenses related to the independent chartered accountant firm shall be borne equally by the Municipal Body and the Developer.
- (iii) If Termination is due to the occurrence of any Force Majeure Event as described under Clause 9.1 sub-clause (ix), Municipal Body shall subject to the certification of the Committee, pay to the Developer, Termination Payment equal to 100% of the Investment in non-movable assets made by the Developer, as on Termination Date ascertained from the table 1 herein above, and as certified by an independent firm of chartered accountants mutually agreed upon and appointed by the Parties for the purpose. The costs for the expenses related to the independent chartered accountant firm shall be borne equally by the Municipal Body and the Developer.

Provided Municipal Body shall be entitled to deduct from the Termination Payment any amount due and recoverable by Municipal Body from the Developer as on the Termination Date.

Schedule C Work Specifications- Construction Requirements and O&M Requirements

The work specifications may be divided into following categories:

1. List of Mandatory Facilities

- (1) Weigh Bridge
- (2) Municipal Solid Waste Inspection Area
- (3) Waste compacting equipment
- (4) Drainage/ Leachate Collection
- (5) Liner system
- (6) Storm Water Drainage System
- (7) Water Storage and Supply System
- (8) Amenities
- (9) Internal Roads for vehicle entry and exit.
- (10) Vehicle parking area
- (11) Shed for machinery and vehicles required for operations and pollution monitoring equipment.
- (12) Utilities
- (13) Boundary wall and fencing and gates
- (14) Green Belt
- (15) Codes and Standards
- (16) Administrative building and Wash rooms for staff
- (17) Fire fighting arrangements
- (18) Safety gear for personnel
- (19) Lighting arrangements
- (20) Drinking water arrangement

2. The landfill plan shall include the details of the following

- (a) Total area requirement
- (b) Phasing of cell operations
- (c) Sequence of cell filling
- (d) Considerations for wet weather operations
- (e) Noise, odour and air pollution abatement
- (f) Emergency action plans
- (g) Labour requirement
- (h) Environmental monitoring
- (i) Gas venting operations
- (j) Leachate handling operations
- (k) Preparation of operation and maintenance manual by concessionaire
- (l) Vehicle routing plan and Waste weighment and unloading procedures
- (m) Billing, record keeping and payments
- (n) Site security

3. Specifications for land filling operations

1. The method of land filling (e.g. trench, area, ramp) will be determined by factors including the physical site characteristics and the owner's ability to achieve compliance with these criteria.
2. Use of approved and generally acceptable standards of plant, equipment and operations methods.
3. In high rainfall areas where heavy compactors cannot be used alternative measures shall be adopted.
4. Wastes shall be covered immediately or at the end of each working day with minimum 10 cm of soil, inert debris or construction material.
5. Prior to the commencement of monsoon season, an intermediate cover of 40-65 cm thickness of soil shall be placed on the landfill with proper compaction and grading to prevent infiltration during monsoon. Proper drainage beams shall be constructed to divert run-off away from the active cell of the landfill.
6. After completion of landfill, a final cover shall be designed to minimize infiltration and erosion. The final cover shall meet the following specifications, namely :--
 - a. The final cover shall have a barrier soil layer comprising of 60 cms of clay or amended soil with permeability coefficient less than 1×10^{-7} cm/sec.
 - b. On top of the barrier soil layer there shall be a drainage layer of 15 cm.
 - c. On top of the drainage layer there shall be a vegetative layer of 45 cm to support natural plant growth and to minimize erosion

4. Signs (M)

Landfill site should have a sign posted at each entrance with the following current information:

1. Site name
2. Owner and operator
3. Contact phone number and address for owner and operator
4. Phone number in case of emergency (such as fire)
5. Hours of operation (if applicable)
6. Materials/wastes accepted for landfill and recycling
7. Materials/wastes banned
8. Tipping fees

Additional signs which clearly indicate the directions to the active tipping face, public disposal area, recycling and waste separation areas, etc. should also be displayed

5. Weighbridge

Based on the approved technical plan section of the Operations Plan, the Concessionaire shall set up a weighbridge and Testing equipment at a suitable location identified by the Concessioning Authority in the landfill Site to meet the Design Requirements laid down in this section:

The Concessionaire shall provide one weigh bridge with two independent weighing platforms of rated capacity of 40 metric tonnes each at designated area in the Landfill Site. Each weighing platform shall have minimum dimensions of 12 m length and 3 m width.

The weigh bridge shall meet the minimum technical specifications set out in the table below:

Parameter	Specifications
Type	Pitless Design, Fully Electronic Weighbridge
No of Platforms	Two
Capacity	40 MT per platform
Resolution	5 kg (Display Increment)
Size	12 m x 3m
Weighing Electronics	Micro-controller type multi-processing of weight based digital weight indicator with <ul style="list-style-type: none"> ▪ Menu driven Operations ▪ Auto Zero / Auto Zero Maintenance ▪ Auto gain & Full Digital Calibration ▪ Auto Calibration Check ▪ Programmable Update Rate with adjustable digital averaging and auto latching ▪ A/D Converter: 24 Bit high resolution integrated ▪ Password security ▪ Parallel Printer Port & Serial EDP port ▪ Real Time Clock ▪ Self & Operator Diagnostics
Printer	80 column Dot Matrix Parallel Printer
Key Board	105 Keys key-board with interface
Data Storage	Facility to store 5000 vehicle information in the memory
UPS	Adequate for 4 hour operation of the weigh bridge
Weighbridge Construction	Rugged fabricated Steel Structure, side girders, 8 mm thick top rated Load, 150% Safe Over Load & 200% Ultimate Load
Software	To print Weighment slip consisting of Time, Date, Lorry Number, Product (waste type), Customer. Gross weight, Net weight.

6. Buildings and Structures

The construction of buildings and other structures on landfills containing putrescible wastes is not recommended for a minimum period of 25 years after closure due to concerns about combustible gas and excessive settlement.

7. Pollution prevention

In order to prevent pollution problems from landfill operations, the following provisions shall be made, namely :-

- a. Diversion of storm water drains to minimize leachate generation and prevent pollution of surface water and also for avoiding flooding and creation of marshy conditions;
- b. Construction of a non-permeable lining system at the base and walls of waste disposal area. For landfill receiving residues of waste processing facilities or mixed waste or waste having contamination of hazardous materials (such as aerosols, bleaches, polishes, batteries, waste oils, paint products and pesticides) minimum liner specifications shall be a composite barrier having 1.5 mm high density polyethylene (HDPE) geomembrane, or equivalent, overlying 90 cm of soil (clay or amended soil) having permeability coefficient not greater than 1×10^{-7} cm/sec. The highest level of water table shall be at least two meter below the base of clay or amended soil barrier layer;
- c. Provisions for management of leachates collection and treatment shall be made. The treated leachates shall meet the standards specified in Section 7 of this schedule;
- d. Prevention of run-off from landfill area entering any stream, river, lake or pond.

8. Water Quality Monitoring

1. Before establishing any landfill site, baseline data of ground water quality in the area shall be collected and kept in record for future reference. The ground water quality within 50 metres of the periphery of landfill site shall be periodically monitored to ensure that the ground water is not contaminated beyond acceptable limit as decided by the Ground Water Board or the State Board or the Committee. Such monitoring shall be carried out to cover different seasons in a year that is, summer, monsoon and post-monsoon period.
 - i. Usage of groundwater in and around landfill sites for any purpose (including drinking and irrigation) is to be considered after ensuring its quality. The following specifications for drinking water quality shall apply for monitoring purpose, namely :-

S.No.	Parameters	IS 10500: 1991 Desirable limit (mg/l except for pH)
1.	Arsenic	0.05
2.	Cadmium	0.01
3	Chromium	0.05
4.	Copper	0.05

5.	Cyanide	0.05
6.	Lead	0.05
7.	Mercury	0.001
8.	Nickel	-
9.	Nitrate as NO ₃	45.0
10.	PH	6.5-8.5
11.	Iron	0.3
12.	Total hardness (as CaCO ₃)	300.0
13.	Chlorides	250
14.	Dissolved solids	500
15.	Phenolic compounds (as C ₆ H ₅ OH)	0.001
16.	Zinc	5.0
17.	Sulphate (as SO ₄)	200

3. The disposal of treated leachates shall follow the following standards, namely: -

S.No	Parameter	Standards (Mode of Disposal)		
		Inland surface water	Public sewers	Land disposal
1.	Suspended solids, mg/l, max	100	600	200

2.	Dissolved solids (inorganic) mg/l, max.	2100	2100	2100
3	PH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
4	Ammonical nitrogen (as N), mg/l, max.	50	50	-
5	Total Kjeldahl nitrogen (as N), mg/l, max.	100	-	-
6	Biochemical oxygen demand (3 days at 27 ⁰ C) max.(mg/l)	30	350	100
7	Chemical oxygen demand, mg/l, max.	250	-	-
8	Arsenic (as As), mg/l, max	0.2	0.2	0.2
9	Mercury (as Hg), mg/l, max	0.01	0.01	-
10	Lead (as Pb), mg/l, max	0.1	1.0	-
11	Cadmium (as Cd), mg/l, max	2.0	1.0	-
12	Total Chromium (as Cr), mg/l, max.	2.0	2.0	-
13	Copper (as Cu), mg/l, max.	3.0	3.0	-
14	Zinc (as Zn), mg/l, max.	5.0	15	-
15	Nickel (as Ni), mg/l, max	3.0	3.0	-
16	Cyanide (as CN), mg/l, max.	0.2	2.0	0.2
17	Chloride (as Cl), mg/l, max.	1000	1000	600

18	Fluoride (as F), mg/l, max	2.0	1.5	-
19	Phenolic compounds (as C ₆ H ₅ OH) mg/l, max.	1.0	5.0	-

Note : While discharging treated leachates into inland surface waters, quantity of leachates being discharged and the quantity of dilution water available in the receiving water body shall be given due consideration

9. Ambient Air Quality Monitoring

- (i) Installation of landfill gas control system including gas collection system shall be made at landfill site to minimize odour generation, prevent off-site migration of gases and to protect vegetation planted on the rehabilitated landfill surface.
- (ii) The concentration of methane gas generated at landfill site shall not exceed 25 per cent of the lower explosive limit (LEL).
- (iii) The landfill gas from the collection facility at a landfill site shall be utilized for either direct thermal applications or power generation, as per viability. Otherwise, landfill gas shall be burnt (flared) and shall not be allowed to directly escape to the atmosphere or for illegal tapping. Passive venting shall be allowed if its utilization or flaring is not possible.
- (iv) Ambient air quality at the landfill site and at the vicinity shall be monitored to meet the following specified standards, namely :-

S.No.	Parameters	Acceptable levels
(i)	Sulphur dioxide	120 $\mu\text{g}/\text{m}^3$ (24 hours)
(ii)	Suspended Particulate Matter	500 $\mu\text{g}/\text{m}^3$ (24 hours)
(iii)	Methane	Not to exceed 25 per cent of the lower explosive limit (equivalent to 650 $\mu\text{g}/\text{m}^3$)
(iv)	Ammonia daily average	
	(Sample duration 24 hrs)	0.4 mg/m^3 (400 $\mu\text{g}/\text{m}^3$)
(v)	Carbon monoxide	1 hour average : 2 mg/m^3 8 hour average : 1 mg/m^3

5. The ambient air quality monitoring shall be carried out by the concerned authority as per the following schedule, namely:-

- (a) Six times in a year for cities having population of more than fifty lakhs;
- (b) Four times in a year for cities having population between ten and fifty lakhs;
- (c) Two times in a year for town or cities having population between one and ten lakhs.

10. Plantation at Landfill Site

A vegetative cover shall be provided over the completed site in accordance with the and following specifications, namely :-

- (a) Selection of locally adopted non-edible perennial plants that are resistant to drought and extreme temperatures shall be allowed to grow;
- (b) The plants grown be such that their roots do not penetrate more than 30 cms. This condition shall apply till the landfill is stabilised;
- (c) Selected plants shall have ability to thrive on low-nutrient soil with minimum nutrient addition;
- (d) Plantation to be made in sufficient density to minimize soil erosion.

11. Closure of Landfill Site and Post-care

The post-closure care of landfill site shall be conducted for at least fifteen years and long term monitoring or care plan shall consist of the following, namely :-

- (a) Maintaining the integrity and effectiveness of final cover, making repairs and preventing run-on and run-off from eroding or otherwise damaging the final cover;
- (b) Monitoring leachate collection system in accordance with the requirement;
- (c) Monitoring of ground water in accordance with requirements and maintaining ground water quality;
- (d) Maintaining and operating the landfill gas collection system to meet the standards.

Use of closed landfill sites after fifteen years of post-closure monitoring can be considered for human settlement or otherwise only after ensuring that gaseous and leachate analysis comply with the specified standards.

12. Record Keeping

The owner and/or operator of a landfill shall record and maintain the following information both on-site and at the legal address of the owner/operator:

1. copy of the permit(s) for the site or the certificate(s) of operation;
2. inspection records for inspections conducted by staff and regulatory agencies;
3. training procedures;
4. contingency plan and notification procedures;
5. closure and post-closure care plans;
6. monitoring results for gas, leachate, surface and ground water;
7. volumes of gas extracted/recovered from the site (where gas collection and management are carried out);
8. volumes of leachate collected from the site (where leachate collection and management are carried out);
9. interpretations of monitoring results;
10. financial assurance documentation if financial assurance is required; and
11. copies of all annual reports.

Schedule D Correspondences that may form part of the Agreement

Schedule E Details of Project Site and Project Facility

To be filled in by the respective ULB with the details of the Project Site and the Project Facilities.

Schedule F Indicative Waste Quantities

The Municipal Body shall endeavour to supply the following quantities of waste on an annual basis through out the tenure of the Contract Period:

Year	Waste Quantity (in tonnes)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Year 1 denotes the period beginning from COD until the corresponding end of the Financial Year i.e. 31st March

Year 2,3,4... denotes the Financial Year beginning 1st April and ending at 31st March unless for Year 10 which denotes the Financial Year beginning 1st April and ending at the Termination Date.

In case of early determination of this Agreement, the interpretation of this clause shall according be modified to read the last year as the year in which the Termination Date falls.

Schedule G Performance Evaluation Framework

Performance Measurement of MSW Treatment for the City of ***		
Time of Inspection		Date
From	To	
Performance Measured By	Designation	Signature
Name		
1		
2		

Section A: Daily Evaluation

Treatment of Bio-degradable MSW through bio-methanation

Performance Factors	Yes/No
1. Is the Waste is deposited and compacted in the allocated cells? Are the cells constructed as per the stipulations/ standards?	
2. Is the leachate collection system functioning as per the design?	
3. Incidents of rodents & flies?	
4. Removal of pre-process and post-process rejects from the site?	
Payment dedn. If any of the above criteria are not met	2.50%

Section B: Random checks with regards to Air Pollution

Ambient air quality measurement (at the boundary of the site on the down wind direction)

S.No.	Parameters	Acceptable levels	Satisfactory: Yes/No
(i)	Sulphur dioxide	120 $\mu\text{g}/\text{m}^3$ (24 hours)	
(ii)	Suspended Particulate Matter	500 $\mu\text{g}/\text{m}^3$ (24 hours)	
(iii)	Methane	Not to exceed 25 per cent of the lower explosive limit (equivalent to 650 $\mu\text{g}/\text{m}^3$)	
(iv)	Ammonia daily average (Sample duration 24 hrs)	0.4 mg/m^3 (400 $\mu\text{g}/\text{m}^3$)	

(v)	Carbon monoxide	1 hour average: 2 mg/m ³ 8 hour average: 1 mg/m ³	
Payment deduction if Ambient air quality is not met: 2.50%			

Section C: Monthly

Compost quality measurement (only if intended to be used for food crops)

Parameters	Concentration not to exceed * (mg/kg dry basis, except pH value and C/N ratio)	Concentration measured	Satisfactory: Yes/No
Arsenic	10.00		
Cadmium	5.00		
Chromium	50.00		
Copper	300.00		
Lead	100.00		
Mercury	0.15		
Nickel	50.00		
Zinc	1000		
C/N ratio	10:1 – 15:1		
PH	7.5-8		

Process Checks (mandatory)

Parameters	Not to exceed/ Desired result	Measured level/ Observation	Satisfactory: Yes/No
pH of feed slurry	7 - 8		
pH of pre-digested slurry	4.5 – 6		
Colour of pre-digested slurry	Yellow		
pH of digested slurry	7 – 8		
Colour of digested slurry	Black		
Payment deduction if above criteria are not met for the Month: 2.50%			

Section D: Random Check with regards to Leachate generation/ disposal

Recycled water disposal standards

S. No	Parameter	Standards for the various modes of disposal of Leachate		
		Disposal standards	Measurement recorded	Does it violate the minimum/maximum standard: Yes/No
1.	Bio-chemical oxygen demand, ppm, max	100		

2.	Chemical oxygen demand ppm, max.	200		
3.	Methane composition %, min.	70		
Payment deduction if any one of the Leachate standards are not satisfied: 2.50 %				

Schedule H Schedule of Rates quoted by the Developer during the bidding stage

Financial Year Beginning	Amount in Rs. per month

Schedule I Sampling Procedure

- (i) The Waste is first unloaded on to a clean and impervious hard surface.
- (ii) The Waste is then thoroughly mixed with the help of a spade and a cone is formed of the Waste.
- (iii) The cone of Waste is then flattened and divided into four quarters.
- (iv) Remove two opposite quarters and mix together the remaining two quarters.
- (v) Repeat the process until a sample having approximately 20% of the original waste volume is obtained.
- (vi) After such a representative sample is obtained, segregate the waste based on biodegradable, non-biodegradable waste.
- (vii) Weigh the biodegradable waste and divide it by the total sample weight.

