

REQUEST FOR PROPOSAL
for
Rehabilitation of Municipal Solid Waste dumpsite at Chelora for
Kannur Municipal Corporation

19th November 2019



Kerala State Industrial Development Corporation Limited.

NAME OF WORK: Rehabilitation of Municipal Solid Waste Dumpsite at Chelora for Kannur Municipal Corporation.

ISSUING OFFICE

The Managing Director

Kerala State Industrial Development Corporation Limited,
T.C. XI/266, Keston Road,
Thiruvananthapuram
Kerala - 695003, INDIA.
Tel: +91 471 2318922

RFP NO : **KSIDC/TVM/W2E/11/2019**

Date : 19/11/2019

LAST DATE OF RECEIPT : On or before : 18/12/2019 up to 15.00 hrs.

SIGNATURE OF THE ISSUING OFFICER:

The Managing Director
Kerala State Industrial Development Corporation Limited,
T.C. XI/266, Keston Road,
Thiruvananthapuram
Kerala - 695003, INDIA.
Tel: +91 471 2318922

DISCLAIMER

The information contained in this Request for Proposal provided to the Bidders, by Kerala State Industrial Development Corporation Limited (hereinafter referred to as “KSIDC”) or any of their employees or advisors, is provided to the Bidder(s) on the terms and conditions set out in this Proposal document and all other terms and conditions subject to which such information is provided.

The purpose of this Proposal document is to provide the Bidder(s) with information to assist the formulation of their Proposals. This RFP document does not purport to contain all the information each Bidder may require. This RFP document may not be appropriate for all persons, and it is not possible for their employees or advisors to consider the business/ investment objectives, financial situation and particular needs of each Bidder who reads or uses this RFP document. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP document and where necessary obtain independent advice from appropriate sources. KSIDC, their employees and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the RFP document.

KSIDC may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP document.

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Notice inviting Bids

- 1.0 Kerala State Industrial Development Corporation Limited (hereinafter referred to as “KSIDC”) invites detailed proposals (hereinafter referred as ‘Bid’) from interested parties having at least 3 years of experience in rehabilitation of dumpsites in India or abroad for rehabilitation of the dumpsite at Chelora for Kannur Municipal Corporation. The Project is based on ‘Design and Build Basis’.
- 2.0 Sealed BIDS, for the above work are invited from the Bidders. Details on project profile, instructions to Bidders, qualification parameters and criteria for evaluation could be obtained from the Bid document.
- 3.0 Proposals in *two separate envelopes* shall be submitted containing (a) Pre-qualification documents including Technical Bid and (b) Financial Bid (Price Bid) in the format. Technical and Financial strength of Bidders shall be evaluated based on the qualification criteria given in this RFP document.

Name of Work	Particulars	Description
“Rehabilitation of Municipal Solid Waste dumpsite at Chelora for Kannur Municipal Corporation”.	RFP Issuing Agency	Kerala State Industrial Development Corporation Limited (KSIDC)
	RFP Document Fee	Rs. 5,000/- + GST (Rupees Five Thousand only)
	Earnest Money Deposit	Rs. 2,00,000/- (Rupees Two Lakhs only)
	Starting date of issue of RFP document	20.11.2019
	Pre-Bid meeting	27.11.2019 at 11.00 hrs at KSIDC Thiruvananthapuram Office
	KSIDC’s response to queries	29.11.2019
	Last date of submission of Bids	18.12.2019 up to 15.00 Hrs.
	Technical Bid Opening Date	20.12.2019 at 15.30 Hrs.
	Price Bid Opening Date	will be intimated later

DOWNLOAD OF RFP DOCUMENT

The RFP document for this work is available on website <https://etenders.kerala.gov.in> and www.ksidc.org. The Bidder shall pay the Bid Fee of Rs. 5,000/- (Rupees Five Thousand only) + GST online through the e – tender portal. .

EARNEST MONEY DEPOSIT

The aforesaid BID must be accompanied by the Earnest Money Deposit (hereinafter referred to as “EMD”) as specified in ‘General Details of Work’ section above. The EMD shall be paid online through e – tender portal (www.etenders.kerala.gov.in) . (As per Form 8 KSIDC reserves the right to accept or reject any or all Bids without assigning any reason thereof. The Notice inviting Bids shall form a part of Contract Document.

The Bidders are advised to read carefully the “Instruction” and “Eligibility Criteria” contained in the RFP documents.

SUBMISSION OF HARD COPIES OF BID

The completed Qualification document (Technical Proposal alone) shall be submitted at the following address through Registered Post Acknowledgment due / Speed post/ in person on or before 4.00pm on 18/12/2019.

The Managing Director
Kerala State Industrial Development Corporation Limited,
T.C. XI/266, Keston Road,
Thiruvananthapuram
Kerala - 695003, INDIA.
Tel: +91 471 2318922

Bids which are not signed, will not be accepted.. The Bids not submitted in line with the RFP document requirements and without EMD, will be rejected outright. The Technical bid of only those Bidders will be evaluated who have remitted RFP document fees and paid EMD.

OPENING OF BIDS

The Technical Bids will be opened at the date and time as mentioned in the RFP document. Financial Bids of only those Bidders will be opened, who are securing the qualifying marks in Technical Evaluation. The date for Financial Bid opening shall be informed to the Successful Bidders at a later date.

GENERAL INSTRUCTIONS

- 1) The cost of RFP document will not be refunded under any circumstances.
- 2) EMD in the form specified in RFP document only shall be accepted.
- 3) The Bid shall be valid for 180 days from the date of opening of Technical Bid.
- 4) Bids without RFP document fees, EMD and which do not fulfill all or any of the condition or submitted incomplete in any respect will be rejected.
- 5) Conditional Bids shall not be accepted.

Memorandum

General Description of work	Rehabilitation of Municipal Solid Waste dumpsite at Chelora for Kannur Municipal Corporation as per SWM Rules 2016. Quantity of waste at site: Approximately 40,000 cum Area of the dumpsite: Please refer Drawings in Section VI
Earnest Money Deposit	Rs. 2,00,000 (Rupees Two Lakhs only) to be paid online through e – tender portal.
Performance Security	The Successful Bidder would be required to submit Performance Security Deposit amounting to 2% of the value of the work.
Time allowed for starting of work	Fifteen days from the date of issue of Work Order/ Signing of Agreement with the selected Bidder
Validity Period of Bid	180 days from the date of opening of Technical Bid.
Time allowed for completion of work from the date of written order to commence	12 months (including monsoon period) 1. Bio-mining and Clearing the site: 3 months 2. Capping : 3 months
Defects Liability Period	6 months from the certified date of completion.
Compensation for Delay (Penalty)	0.01 % of the Contract Value per day from the date of delaying and shall be subject to maximum amount of 5% of the estimated amount put to the Bid.
Starting date of Sale of RFP Document	20.11.2019
Pre-Bid queries to be submitted on or before	25.11.2019 at 11.00 hrs at KSIDC Thiruvananthapuram Office
Pre Bid Meeting	27.11.2019 at 1100 Hrs
Last Date for submission of Bids	18.12.2019 up to 15:00 Hrs.
Technical Bid Opening Date	20.12.2019 at 15.30 Hrs.

SECTION I: INSTRUCTIONS TO BIDDERS

1.0 GENERAL INFORMATION & SCOPE OF WORK

1.1 Solid Waste Management has been a critical issue in Kerala, especially in urban areas, for many years. Government of Kerala, through its Local Self Government Department, is in the process of implementing Solid Waste Management solution for the State on a high priority.

Kerala State Industrial Development Corporation (KSIDC) has been appointed as the Nodal Agency for the engagement of Private players for the implementation of Solid Waste Management solutions at various locations/clusters in the State of Kerala.

In accordance with the SWM Rules, 2016 (hereinafter referred to as "SWM Rules") it is required to carry out the disposal of the Municipal Solid Waste (MSW) in a scientific manner. As per the provisions of the SWM Rules, the existing landfill sites (dumpsites) should be improved in accordance of the specifications given in Schedule III of the Rules.

1.2 Kerala State Industrial Development Corporation Limited, as the Nodal Agency (*hereinafter referred to as "KSIDC"*), has proposed scientific closure/ capping of the Municipal Solid Waste Dumpsite and has decided to carry out competitive single-stage bidding process on behalf of Kannur Municipal Corporation (*referred to as the "Bidding Process"*) for selection of the private Contractor to whom the Project may be awarded.

1.3 The Brief Scope of Work for the Bidder is as set out below. Outline of the construction requirements and specifications are set out in the Conditions of Contract attached with this Bid document.

- a. The scope of work includes recovery of 9.7 acres of land at Chelora site as indicated in the enclosed drawing by adopting a combination of (a) Bio-mining and clearing of site (within 3 months) and Capping (3 months) methods and (b) Cutting and levelling to the maximum possible to get a relatively flat land suitable for the construction of the plant.
- b. The successful bidder shall process about 40,000 cum of old garbage as follows:
 - Maximum quantity of waste shall be bio-mined to recover compost and RDF material
 - Balance quantity of waste that cannot be recovered shall be capped as per SWM Rules 2016
- c. The Successful Bidder shall design and construct the project in accordance with the requirements as set out in this section of '*Technical Bid Document*'. The design and drawings including detailed constructional drawings are to be submitted by the Contractor before construction and as per site conditions, which shall be implemented after verification by KSIDC.
- d. An outline of the task to be carried out for capping is listed as follows;
 - To cut and shift waste wherever required within identified area as per drawings given in Section VI to ensure stability of the site and the surroundings.
 - to dispose the cut waste, fill site undulations and provide a slope of a minimum of 1:2.5 (1Vertical: 2.5 Horizontal), or as per desired site conditions whichever is technically viable with respect to slope stability.

- to compact waste in the entire area as specified under the CPHEEO Manual and SWM Rules, 2016.
 - to take special care of openings / leakages and low lying areas where there are chances of leachate outflow by plugging with suitable measures.
 - to design cover system as per SWM Rules, 2016.
 - To provide leachate collection system and landfill gas management as per SWM Rules, 2016.
 - to provide storm water drainage facility inside the capped area
- e. The dumpsite is to be closed by placement of a top cover which consists of the following:
- a) Supply & installation of **Geo-synthetic clay liner** as per given specifications, complete to form an impervious barrier.
 - b) Supply & installation of **1.5mm Thick HDPE Smooth Geo-membrane Liner** as per given specifications, complete to form an impervious barrier as shown in drawings.
 - c) Supply & install **Geo-synthetic drainage nets (Geo-nets)** of appropriate specification and make, laying anchoring in trench, overlapping, testing complete as given in General Specification and as shown in the drawings. Geo-nets must be anchored within anchor trench including related anchoring work etc. complete. Rate to include the necessary lap at joints, wastage, testing, etc. complete. Measurement will be made as per finished area. Geo-net in the anchor trench will be taken in measurement.
 - d) Supply & installation of **Non-woven Geotextile (GT)** of appropriate specification and make, as per details given in Specifications, spreading on the sand layer or Geo-membrane as per the directions given by the Engineer-in-charge, without damaging the Geotextile or Geo-membrane. The Geotextile must be placed along the slope from top to bottom with an overlap of minimum 100mm. It should be stitched with HDPE thread. Geotextile must be anchored within anchor trench including excavation of trench and backfilling, compaction complete, at top and bottom portion. Rate to include the necessary lap for jointing, stitching, wastage complete. Measurement will be made as per finished surface area. Geotextile in the anchor trench will be taken in measurement.
 - e) **Drilling 500mm Dia** bore for the Gas well including required machinery, tripod and related all machinery with all lead and lifts. Disposing bored material
 - f) **Vegetative soil layer:** The top layer should be 60 cm thick vegetative soil laid on well gravel.
 - g) **Surface and Peripheral drain**
 - h) **Access steps**
- f. Access road
- g. The Contractor will be permitted to retain the revenue generated from the sale of by-products obtained from bio-mining activities.
- h. The Successful Bidder shall adhere to the construction requirements/ specifications without compromising the quality of work and complete the project on or before the Scheduled Project Completion Date, as specified in this document.

- i. The Successful Bidder may undertake Construction Works by itself or through a Contractor possessing requisite technical, financial and managerial expertise/capability; but in either case, the Successful Bidder shall remain solely responsible to meet the Construction Requirements, as specified in this Bid document.
- j. The Successful Bidder shall, at all times, ensure that all aspects of the Project and processes employed in the construction, thereof shall conform with the laws including SWM Rules 2016 and others pertaining to environment, health and safety aspects and policies and guidelines related thereto.

2.0 SCOPE OF BID

- 2.1 KSIDC is the Nodal Agency for the implementation of Solid Waste Management infrastructure project in Kannur district.

KSIDC invites detailed Proposals (*referred to as "Bid"*) through this Request for Proposal (RFP) Document for **Rehabilitation of Municipal Solid Waste dumpsite at Chelora for Kannur Municipal Corporation** (*hereinafter referred to as "the Project"*) by way of capping / Bio Mining/ combination of both methods and cutting & leveling of the land.

- 2.2 The Bids shall be evaluated based on the evaluation criteria set out in this RFP document in order to identify the successful Bidder for the Project (*hereinafter referred to as "Successful Bidder"*). The Successful Bidder would then have to enter into an Agreement with Kannur Municipal Corporation and perform the obligations as stipulated therein, in respect of the Project.

3.0 ELIGIBLE BIDDERS

- 3.1 The Bidder shall be a Contractor with experience in closure of dumpsite scientifically capped in India or abroad for Solid Waste Disposal. In case of a Consortium, any one of the members of the Consortium or Joint Partnership as applicable, should satisfy this condition.
- 3.2 The Bidders eligible for participating in the qualification process shall be any one of the following categories:
- 3.2.1 Category 1: A single Business Entity¹ meeting the qualification criteria as set out in Clause no 3.5 and 3.6.
- 3.2.2 Category 2: In case the Bidder, which is a Business Entity, (hereinafter referred to as "Lead Member") does not have the qualification criteria as set out in Clause no 3.5 and 3.6., the same may be procured from a suitably qualified Operator, (hereinafter referred to as "Operator"), with whom a valid Memorandum of Understanding (hereinafter referred to as "MoU") formalizing such an arrangement should be in place. The Operator must also be a

¹ Business Entity means a company duly incorporated under the Companies Act, 1956/2013 or a registered partnership firm or a registered society in India. In case of foreign entities, they should be registered under the relevant Acts in the respective countries. In case of a partnership firm or a society, a copy of the certificate of registration, issued by the concerned authority, should be submitted along with the Bid

Business Entity. This joint entity shall hereinafter be referred to as "Consortium". No Bidder applying individually or as a member of a Consortium or Joint Partnership, as the case may be, can be member of another Consortium or Joint Partnership. The consortium or joint partnership is restricted to two business entities.

3.3 The Bidders eligible for participating in the qualification process shall possess the requisite qualification.

3.4 Any entity, which has earlier been barred or blacklisted or whose contract is terminated by the procurement authorities prior to the contract period by Government of Kerala or any State or Central Government or other public procurement authorities (*hereinafter referred to as "Procurement Authorities"*) would not be eligible to submit a Bid.

3.5 Criteria for Technical Capacity

- 1) The Bidder shall have at least 3 (three) years' experience in solid waste management projects in India or abroad.
- 2) The Bidder should have executed in the last three years, the following minimum quantities of work:
 - (i) Quantity of municipal solid waste handled / capped (Profiling, shifting, Levelling, Compaction and Reformation of slopes): 50000 Cum
 - (ii) Supply & installation of Non-woven Geotextile (GT): 20,000 Sqm.
 - (iii) Supply & installation of Geo-synthetic drainage nets (Geo-nets): 20,000 Sqm.
 - (iv) HDPE Liner Laying, Welding and Installation experience for MSW Landfills (in a single contract): 20,000 Sqm.
 - (v) Vegetative soil layer of minimum 450 mm thick: 20,000 Sqm.

3.6 Criteria for Financial Capacity

- 1) The annual turnover of the Bidder shall be a minimum of Rs.12 Crores (Rupees. Twelve Crores only) every year for the last three consecutive financial years (i.e. FY 2016-17, FY 2017-18 and FY 2018-19). For FY 19 if audited financial statements are not available, a certificate from Chartered Accountant confirming the turnover shall be provided.
- 2) The Bidder should have satisfactorily completed as a prime contractor, (or as subcontractor duly certified by the employer or the main contractor supported by authorization from the employer for subcontracting) at least one similar project of value not less than Rs. 4 Crores (Rupees Four Crores only). In case of a Consortium, any one of the members of the Consortium or Joint Partnership as applicable, should satisfy these conditions stipulated in i.e. 3.5 and 3.6.

For meeting the financial capacity, similar project would mean: Rehabilitation of Municipal Solid Waste dumpsite Or Construction of MSW/HW landfill Or Disposal of MSW/ HW. Preference will be given to bidders having experience in the field of rehabilitation of municipal solid waste dumpsite in India or abroad based on the evidence

provided for their successful performance. The experience in last three years shall be considered.

- 3.7 In case of any Bidder or any member of the Consortium or Joint Partnership as the case may be, either directly or through any subsidiaries or group or associate companies², is operating currently or has operated any time during the previous three years preceding the Bid Due Date in any waste management projects viz. processing or land filling or capping for any municipal corporation or municipality in India, shall submit a Satisfactory Performance Report in the format at Form 5A or in any other format detailing the work completed satisfactorily. All the bidders including consortium partners in India or overseas are required to submit client certificate as above.

3.7 Additional Requirements for Bids Submitted by a Consortium

- 3.7.1 Wherever required, the Bid shall contain the information required of each of the members of the Consortium.
- 3.7.2 The members of the Consortium shall furnish Power of Attorney duly signed by authorized representative(s) of the members.
- 3.7.3 The Bid shall be signed by the duly authorized signatory of the Lead Member and shall be legally binding on all the members of the Consortium
- 3.7.4 The Consortium shall submit a MoU as part of its Bid. The MoU shall, include the following:
- a) Clearly, set out the roles and responsibilities of each Member of the Consortium for implementing the Project.
 - a) Include a statement to the effect that the members of the Consortium shall be liable jointly and severally for the implementation of the Project in accordance with the terms of the Contract Agreement.
 - b) In naming the Lead Member and the Operator of the Consortium, to include their successors and permitted assigns.

A copy of the MoU should be submitted as part of the Bid. The MoU entered into between the Members of the Consortium should be specific to the Project and should contain the above requirements, failing which the Bid would be liable to be considered non-responsive.

3.8 Additional Requirements for Bids submitted by a Joint Partnership

- a) The Lead Partner shall be a Business Entity.
- b) The general terms and conditions governing the responsibilities amongst the partners shall be described in the Agreement constituting the Joint Partnership

² “Associate” shall mean any company (ies) which is (are) controlled by the shareholders of the Bidder. For the purpose of this definition, the term “control” means the power to direct the management or policies of such entity, directly or indirectly, through the ownership of shares or other securities, by contract or otherwise, provided that the direct or indirect ownership of fifty one percent (51%) or more of its voting share capital by the shareholders of the Concessionaire is deemed to constitute control of such entity, and “controlling” and “controlled” shall be construed accordingly.

(hereinafter referred to as Memorandum of Understanding).

- c) The maximum number of participants in the Joint Partnership shall not exceed two including the Lead Partner.

4.0 SITE VISIT

Bidders are requested to inspect the site (s) prior bidding for the project. The site (s) shall be inspected by Bidder or his representative at his own cost.

5.0 NUMBER OF BIDS

Each Bidder shall submit a maximum of one (1) Bid for the Project, in response to this RFP document. Any Bidder who submits more than one Bid for the Project will be disqualified. The Bidder shall also be responsible and shall pay for all of the costs associated with the preparation of its Bid and its participation in the Bidding process.

6.0 VALIDITY OF BID

The Bid shall remain valid for a period not less than 180 days from the date of opening of Technical Bid (*hereinafter referred to as "Bid Validity Period"*) reserves the right to reject any Bid which does not meet this requirement. In exceptional circumstances, prior to expiry of the original Bid Validity Period, KSIDC may request Bidders to extend the Bid Validity Period for a specified additional period. Bidders not extending the Bid Validity Period when so requested would automatically be disqualified.

7.0 EARNEST MONEY DEPOSIT

- 7.1 Each Bid shall be accompanied by EMD of Rs. 2,00,000/- (Rupees Two lakhs only).
- 7.2 The EMD shall be paid online through the e – tender portal (www.etenders.kerala.gov.in) . Irrevocable Bank Guarantee from scheduled bank in format is also acceptable. Format for Bank Guarantee is provided as Form 8.
- 7.3 The EMD of all the unsuccessful Bidders, except two lowest Bidders would be returned without interest within a period of eight (8) weeks from the date of announcement of the Successful Bidder. EMD of the second lowest Bidder would be returned within a period of four (4) weeks from the signing of the Contract with the Successful Bidder. The EMD shall be adjusted towards the Performance Security, amounting to 2% of the total value of the work. The detail of the Performance Security is stated in the Conditions of the Contract.
- 7.4 The EMD shall be forfeited in the following cases:
 - a) If the Bidder withdraws its Bid during the interval between the Bid Due Date and expiration of the Bid Validity Period.
 - b) If the Successful Bidder fails to provide the Performance Security within the stipulated time or any extension thereof provided by KSIDC; and
 - c) If any information or document furnished by the Bidder turns out to be misleading or untrue in any material respect.

8.0 COST OF BIDDING

All cost and expenses incidental to preparation of proposal, to attend discussion and conferences, if any, including pre award discussion with the Successful Bidder, technical and other presentation including any demonstrations, etc. shall be borne by the Bidders and the KSIDC shall bear no liabilities whatsoever on such cost and expenses.

9.0 RIGHT TO ACCEPT OR REJECT ANY OF THE APPLICATIONS

9.1 Notwithstanding anything contained in this Bid document, KSIDC reserves the right to accept or reject any Bid or to annul the Bidding process or reject all Applications/ Bids, at any time without any liability or any obligation for such rejection or annulment and without assigning any reasons.

9.2 KSIDC reserves the right to reject any Bid if:

- a) At any time, a material misrepresentation is made or discovered, or
- b) The Bidder does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Bid.

9.3 Rejection of the Bid by KSIDC as aforesaid would lead to the disqualification of the Bidder.

10.0 AMENDMENT OF BID

10.1 At any time prior to the Bid Due Date, KSIDC may, for any reason, whether at its own initiative or in response to clarifications requested by a Bidder, modify the Bid Document by the issuance of Addenda.

Any Addendum thus issued will be sent in writing to all the Bidders who have purchased the Bid document and have duly intimated to KSIDC their particulars including address for communication. Addendums will also be posted on website <https://etenders.kerala.gov.in> and <https://www.ksidc.org/>

10.2 In order to provide the Bidders a reasonable time to examine the Addendum, or for any other reason, KSIDC may, at its own discretion, extend the Bid Due Date.

11.0 CLARIFICATIONS

11.1 A prospective Bidder requiring any clarification on the RFP document may notify KSIDC in writing at:

The Project Director

PMU- Waste to Energy Projects

Kerala State Industrial Development Corporation Limited,

T.C. XI/266, Keston Road,

Thiruvananthapuram

Kerala - 695003,

Tel: +91 471 2318922

Email : nandanpv@ksidcmail.org

11.2.1 The Bidders should send in their queries latest by 16.00 pm on 25th November 2019 to the email id prathima@ksidcmail.org . The responses to the pre bid queries will be uploaded

in the websites <https://etenders.kerala.gov.in> and <https://www.ksidc.org/> . KSIDC will forward its responses, at its sole discretion, to everyone who have purchased the RFP document and would include a description of the enquiry and the response of KSIDC without identifying the source of the enquiry.

12.0 FORMAT AND SIGNING OF BID

12.1 The Bid and all related correspondence and documents should be written in the English language. Supporting documents and printed literature furnished by the Bidder with the Bid may be in any other language provided that these are accompanied by appropriate translations of the pertinent passages in the English language. Supporting material, which is not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Bid, the English language translation shall prevail.

12.2 The currency for the purpose of the Bid shall be the Indian Rupee (INR). If the Bid is submitted in any other currency, KSIDC reserves the right to use suitable exchange rate for uniformly evaluating all Bids.

12.3 The Bidder would provide all the information as per this Bid. KSIDC would evaluate only those Bids that are received in the required format and are complete in all respects. Each Bid shall comprise the following:

A. Part I Submission–Technical Bid

- Form 1: Covering Letter
- Form 2: Details of the Bidder
- Form 3: Power of Attorney for Signing of Bid (Applicable both for Single Business Entity and Consortium)
- Form 4: Power of Attorney for designating Lead Member of the Consortium
- Form 5: Proof of Technical and Financial Qualification
- Form 5A; Satisfactory Performance Certificate
- Form 6: Declaration
- Form 7: Anti–Collusion Certificate
- Form8: Format for Bank Guarantee for EMD

B. Part II Submission–Financial Bid

Financial Bid is to be filled as per the format set out in Form 10. Details to be submitted include:

- Value of the Work for Rehabilitation of Municipal Solid Waste dumpsite at Chelora

12.4 The Bidder shall submit Part I and Part II of the Bid E – tender portal.

12.5 The Bidder shall prepare one (1) original and one (1) copy of the Technical Bid, clearly marked “ORIGINAL” and “COPY” respectively. In the event of any discrepancy between the original and the copy, the original shall prevail.

12.6 The Technical Bid, both the original and the copy shall be typed or written in indelible ink and each page of the Bid shall be initialed by an authorized signatory of the Bidder, as applicable. All the alterations, omissions, additions, or any other amendments made to the Bid shall also be initialed by the person(s) signing the Bid.

13.0 SEALING AND MARKING OF BID

13.1 The Bidder shall seal the original and copy of the Technical Bid in separate envelopes, duly marking the envelopes as “ORIGINAL” and “COPY”. The envelopes shall then be sealed in a single outer envelope.

13.2 Each of the envelopes, both outer and inner, must be super scribed with the following information:

- a) Name and Address of Bidder
- b) Contact person and phone numbers
- c) Bid for the Project: **“Rehabilitation of Municipal Solid Waste dumpsite at Chelora for Kannur Municipal Corporation”**.

13.3 The Technical Bid envelope shall be submitted in person or sent by registered post / speed post to the below furnished address on or before 15.00 pm on 18/12/2019 :

The Managing Director

Kerala State Industrial Development Corporation Limited,
T.C. XI/266, Keston Road,
Thiruvananthapuram
Kerala - 695003,
Tel: +91 471 2318922

14.0 BID DUE DATE

14.1 Bids should be submitted before 1500 hours IST 18.12.2019, in the manner and forms detailed in this RFP document. Bids submitted by either facsimile transmission or telex or email will not be accepted.

14.2 Bids received after the Bid Due Date shall not be accepted by KSIDC.

14.3 KSIDC may, in exceptional circumstances, and at its sole discretion, extend the above Bid Due Date by issuing an Addendum. Any Addendum thus issued will be sent in writing to all those who have purchased the Bid document and would also be posted on the website. The same will also be communicated to those who have downloaded the Bid document from the website and have dully intimated this fact to KSIDC giving their particulars including address for communication.

14.4 It is desirable that each Bidder submits its Bid after visiting the Project Site for ascertaining the location, surroundings, or any other matter considered relevant.

14.5 Bidders would be granted permission by KSIDC for visit of the Project Site on receipt of a formal written request, reasonably in advance of the proposed date of visit.

- 14.6 It would be deemed that by submitting the Bid the Bidder has:
- a) Made a complete and careful examination of this Bid document
 - b) Received all relevant information requested from KSIDC
 - c) Made a complete and careful examination of the various aspects of the Project including but not limited to:
 - (i) The Project Site
 - (ii) The conditions of the access roads and utilities in the vicinity of the Project Site
 - (iii) Conditions affecting transportation, access, handling and storage of materials
 - (iv) Clearances obtained by KSIDC for the Project, and
 - (v) all other matters that might affect the Bidder's performance under the terms of this RFP document.
- 14.7 KSIDC shall not be liable for any mistake or error on the part of the Bidder in respect of the above.
- 15.0 MODIFICATION / SUBSTITUTION / WITHDRAWAL OF APPLICATION**
- 15.1 The Bidder is not allowed for any kind of modification, substitution, or withdrawal of its Bid under any circumstances after submission of Bid except for clarifications demanded by KSIDC, during negotiations or Bidding process.
- 16.0 OPENING OF BIDS AND CLARIFICATIONS**
- 16.1 KSIDC would open the Part I Submission of the Bids at 15.30 hours on 20.12.2019.
- 16.2 KSIDC reserves the right to reject any Bid not submitted on time and which does not contain the information / documents as set out in this RFP document.
- 16.3 To facilitate evaluation of Bids, KSIDC may, at its sole discretion, seek clarifications in writing from any Bidder regarding its Bid. The request for such clarification or substantiation and the response shall be in writing or by email. No material change in the substance of the Bid would be permitted by way of such clarification / substantiation.
- 16.4 Information relating to the examination, clarification, evaluation, and recommendation of the Bid shall not be disclosed to any person not officially concerned with the process. KSIDC will treat all information submitted as part of the Bid in confidence and would require all those who have access to such material to treat the same in confidence. KSIDC will not divulge any such information unless it is ordered to do so by any authority pursuant to applicable law or order of a competent court or tribunal, which requires its disclosure.
- 16.5 To clarify and discuss issues with respect to the Project and the Bid, KSIDC will hold Pre-Bid Meeting on 27.11.2019 at 11.00 hrs.
- 16.6 Prior to the Pre-bid meeting(s), the Bidders may submit a list of queries and propose

deviations, if any, to the Project requirements and/or the Bid. Bidders must formulate their queries and forward the same to KSIDC at the date and time as detailed in clause 11.2.1 of this RFP document. KSIDC may, in its sole discretion or based on inputs provided by Bidders, amend the Bid.

16.7 Bidders may note that KSIDC will not entertain any deviations to the Bid at the time of submission of the Bid or thereafter. The Bid to be submitted by the Bidders would have to be unconditional and unqualified and the Bidders would be deemed to have accepted the terms and conditions of the Bid with all its contents including the Special Conditions of the Contract. Any conditional Bid shall be regarded as non-responsive and would be liable for rejection.

16.8 Attendance of the Bidders at the Pre-bid meeting is not mandatory.

16.9 All correspondence/ enquiries should be submitted to the following in writing by fax/ registered post/ courier/ email:

The Project Director

PMU- Waste to Energy Projects

Kerala State Industrial Development Corporation Limited,

T.C. XI/266, Keston Road,

Thiruvananthapuram

Kerala - 695003, INDIA.

Tel: +91 471 2318922

Email : nandanpv@ksidcmail.org / prathima@ksidcmail.org

17.0 EVALUATION

A. Bid Evaluation: Part I Submission – Technical Bid

17.1 The Part I Submission of the Bid would first be checked for responsiveness with the requirements of the RFP document. The Bid would be considered to be responsive if it meets the following conditions:

- a) It is received / deemed to be received by the Bid Due Date including any extension thereof.
- b) It is signed, sealed and marked as stipulated in RFP document
- c) It contains all the information and documents as requested in RFP document
- d) It contains information in formats specified in RFP document
- e) It mentions the Bid Validity Period as set out in RFP document
- f) It provides information in reasonable detail. (“Reasonable Detail” means that, but for minor deviations, the information can be reviewed and evaluated by KSIDC with communication with the Bidder). KSIDC reserves the right to determine whether the information has been provided in reasonable detail.
- g) There are no inconsistencies between the Bid and the supporting documents.

A Bid that is substantially responsive is one that conforms to the preceding requirements without material deviation or reservation. A material deviation or reservation is one

- a) Which affects in any substantial way, the scope, quality, or performance of the Project, or
- b) Which limits in any substantial way, inconsistent with the Bid, KSIDC's rights or the Bidder's obligations under the Special Condition of Contract, or
- c) Which would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

17.2 In case the Bid is found to be responsive, Part I Submission would be evaluated in accordance with the criteria for technical and financial capacities of the Bidders set out in Clause 3.5 and 3.6. Based on the Proof of Experience, financial and technical qualification and Technical Bid submitted by the Bidders, the Qualified Bidders would be selected.

Marking System

Sl. No.	Description	Marks
1.	Financial Capacity	40 marks
(a)	Average Annual Turnover for the last three financial years, between Rs. 20 crores to Rs 25 crores	20 marks
(b)	Average Annual Turnover for the last three financial years, greater than Rs. 25 crores and less than Rs 30 crores	30 marks
(c)	Average Annual Turnover for the last three financial years, greater than Rs. 30 crores	40 marks
2.	Technical Capacity	60 marks
(a)	Experience in Implementation of dumpsite/landfill closure/capping/ gas extraction work of a municipal solid waste dumpsite (completed)	30 marks
(b)	Experience in carrying out post-closure operation and maintenance operations of a capped municipal solid waste dumpsite (completed / on-going)	30 marks

17.3 Minimum Qualifying Marks for Technical Evaluation of Part I submission will be seventy (70). This will be considered as the 'cut off' marks for technical bid evaluation (Part I submission). Bids not scoring above the 'cut off' shall be disqualified.

17.4 As part of the evaluation of the Part I Submission, KSIDC may also request the Bidder to submit clarifications.

17.5 The evaluation of the Part II Submission would be taken up only after Part I Submission is found to meet the requirements of this Bid.

17.6 KSIDC reserves the right to reject the Bid of a Bidder without opening the Part II Submission if, in its opinion, Part I Submission is not substantially responsive with the requirements of this RFP document.

B. Bid Evaluation: Part II Submission –Financial Bid

17.7 Part II Submission of all the Bidders whose Part I Submission meets the requirements of the RFP document and clears ‘cut off’ marks only will be evaluated.

17.8 The format for quoting the Financial Bid is set out in Form 10. Financial evaluation will be based on the following details requested as a part of Financial Bid.

- Value of the Work (including GST) for Rehabilitation of the Municipal Solid Waste dumpsite at Chelora.

C. Selection Methodology

17.9 The Bidder (who has cleared the cut off mark in Part I submission) with the lowest quote of ‘value of the work’ would be declared as preferred bidder. The Financial Proposals would be ranked in ascending order of the Bid Price, with the Bidder quoting the lowest Bid Price being ranked first and the Bidder quoting the second lowest Bid Price ranked as second and so on.

17.10 In case there are two or more Bidders quoting the same cost, KSIDC in such case call all such Bidders for negotiation and select the preferred Bidder based on the outcome of negotiations done in SEALED OFFERS sent at the office address of the Managing Director, KSIDC.

17.11 Depend upon the actual capacity assessed and other qualifying requirements, the Bidder will be qualified for the work. However, at the price bid evaluation stage, a careful check of the appropriate references with regards to updated information covering additional liability created by the Bidder will be done and in no case, a contract will be awarded to a Bidder lacking in the financial and technical resources to undertake the work regardless of qualification.

17.12 KSIDC reserves the right to reject any Proposal, if:

- a) at any time, a material misrepresentation is made or discovered; or
- b) the Bidder does not respond promptly and diligently to requests for supplemental information required for the evaluation of the Proposal.

Rejection of a Proposal by KSIDC as aforesaid would lead to the disqualification of the Bidder. If such disqualification / rejection occurs after the Proposals have been opened and the Preferred Bidder gets disqualified / rejected, then KSIDC reserves the right to:

- a) Either select the next best Bidder, or
- b) Take any such measure/s as may be deemed fit in the sole discretion of KSIDC, including annulment of the bidding process.

- 17.13 The Preferred Bidder will be called for negotiation based on the technical specification required for the project, quality assurance and details of cost estimation provided accordingly.
- 17.14 In the event of acceptance of the Preferred Bidder after negotiation, KSIDC shall declare the Preferred Bidder as the Successful Bidder. Kannur Municipal Corporation will notify the Successful Bidder through a Letter of Acceptance (herein after referred to as “LoA”) that its Proposal has been accepted.
- 17.15 The Successful Bidder shall execute the Contract Agreement with Kannur Municipal Corporation within four (4) weeks of the issue of LoA or with in such further time as KaMC may agree to in its sole discretion.
- 17.16 Information relating to the examination, clarification, evaluation and recommendation for the shortlisted Bidders would not be disclosed to any person not officially concerned with the process. KSIDC would treat all information submitted as part of the Proposal in confidence and will ensure that all who have access to such material treat it in confidence. KSIDC would not divulge any such information unless ordered to do so by any KSIDC authority that has the power under law to require its disclosure.
- 17.17 To assist in the examination, evaluation, and comparison of Proposals, KSIDC may utilize the services of consultant(s) or advisor(s).
- 17.18 Notwithstanding anything contained in this RFP, KSIDC reserves the right to accept or reject any Proposal, or to annul the bidding process or reject all Proposals, at any time without any liability or any obligation for such rejection or annulment, without assigning any reasons thereof.

SECTION II: FORMS FOR BID SUBMISSION

FORM 1: FORMAT FOR COVERING LETTER

(On the Letterhead of the Bidder)

Date:

To

The Managing Director

Kerala State Industrial Development Corporation Limited,
T.C. XI/266, Keston Road,
Thiruvananthapuram
Kerala - 695003, INDIA.

Sub: “Rehabilitation of Municipal Solid Waste dumpsite at Chelora for Kannur Municipal Corporation”.

Ref : Notification No. _____ dated _____.

Dear Sir,

Being duly authorized to represent and act on behalf of..... (hereinafter referred to as “the Bidder”), and having reviewed and fully understood all of the proposal requirements and information provided and collected, the undersigned hereby submits the Proposal on behalf of (Name of Bidder) for the Project in one (1) original and one (1) copy, with the details as per the requirements of the RFP, for your evaluation.

We confirm that our Proposal is valid for a period of six months from the Proposal Due Date.

We also hereby agree and undertake as under:

Notwithstanding any qualifications or conditions, whether implied or otherwise, contained in our Proposal we hereby represent and confirm that our Proposal is unqualified and unconditional in all respects.

Yours faithfully,

For and on behalf of (Name of Bidder)

Duly signed by the Authorised Signatory of the Bidder

(Name, Title and Address of the Authorised Signatory)

FORM 2: FORMAT FOR DETAILS OF THE BIDDER

1. (a) Name of Bidder
(b) Address of the office(s)
(c) Date of incorporation and / or commencement of business

2. Brief description of the Bidder's mainlines of business.

3. Details of individual(s) who will serve as the point of contact / communication for with the Bidder:
 - a) Name:
 - b) Designation:
 - c) Company/Firm:
 - d) Address:
 - e) Telephone number:
 - f) E-mail address:
 - g) Fax number:
 - h) Mobile number:

4. Name, Designation, Address and Phone Numbers of Authorised Signatory of the Bidder:
 - a) Name:
 - b) Designation:
 - c) Company/Firm:
 - d) Address:
 - e) Telephone number:
 - f) E-mail address:
 - g) Fax number:
 - h) Mobile number:

5. In case of a Consortium:
 - (a) The information above (1-4) should be provided for all the Members of the Consortium.
 - (b) Information regarding the role of each Member should be provided as per table below:

Sl. No.	Name of Member	Role <i>(Specify whether Lead Member or Operator)</i>
1		
2		

Note:

1. The Bidder to enclose the following documents:
 - (i) Incorporation certificate of the company/ Proof of Company registration document/ MoA;
 - (ii) Copy of PAN Card;
 - (iii) Copy of GST registration Certificate

FORM 3: FORMAT FOR POWER OF ATTORNEY FOR SIGNING OF BID
(On Stamp paper of relevant value)

Know all men by these presents, We.....(name and address of the registered office) do hereby constitute, appoint and authorize Mr./ Ms. (name and residential address) who is presently employed with us and holding the position of as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to, for the “Rehabilitation of the Municipal Solid Waste dumpsite at Chelora for Kannur Municipal Corporation” (hereinafter referred to as “the Project”) on behalf of Kerala State Industrial Development Corporation Limited (hereinafter referred to as KSIDC), including signing and submission of all documents and providing information/responses to KSIDC in all matters in connection with our Proposal for the Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this the _____ Day of _____ 2019

For _____

(Name and designation of the person(s) signing on behalf of the Bidder)

Accepted

(Signature)

(Name, Title and Address of the Attorney)

Date:

Note:

- 1) To be executed by the Lead Member in case of a Consortium.
- 2) In case of Bidders who are not resident in India, the Power of Attorney will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued.
- 3) The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- 4) Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a resolution/power of attorney in favour of the Person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.

- 5) In case an authorised Director of the Bidder signs the Proposal, a certified copy of the appropriate resolution conveying such authority may be enclosed in lieu of the Power of Attorney.

FORM 4: FORMAT FOR POWER OF ATTORNEY FOR LEAD MEMBER OF CONSORTIUM

(On a Stamp Paper of relevant value)

Whereas, Kerala State Industrial Development Corporation Limited (hereinafter referred to as KSIDC) has invited proposals from qualified Bidders for taking up on “the “Rehabilitation of the Municipal Solid Waste dumpsite at Chelora for Kannur Municipal Corporation” (hereinafter referred to as “the Project”).

Whereas, the Consortium being one of the qualified Bidders is interested in bidding for the Project and implementing the Project in accordance with the terms and conditions of this Document, and

Whereas, it is necessary under this Document for the members of the Consortium to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's Proposal for the Project or in the alternative to appoint one of them as the Lead Member who, would have all necessary power and authority to do all acts, deeds and things on behalf of the Consortium, as may be necessary in connection with the Consortium's Proposal for the Project.

NOW THIS POWER OF ATTORNEY WITNESSETH THAT;

We, M/s. -----, and M/s..... (the names and address of the registered offices), do hereby designate M/s.....being one of the members of the Consortium, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's Proposal for the Project, including submission of Proposal, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with KSIDC, any other Government Agency or any person, in connection with the Project until culmination of the process of bidding and thereafter till the Contract Agreement is entered into with KSIDC.

We hereby agree to ratify all acts, deeds and things lawfully done by the Lead Member and our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/Consortium.

Dated this theDay of2019

.....

(Executants)

(TO BE EXECUTED BY THE MEMBERS OF THE CONSORTIUM)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure (for a body corporate).

FORM 5: PROOF OF TECHNICAL AND FINANCIAL QUALIFICATION*Technical Capacity*

The list of completed/ ongoing eligible projects should be provided in the format provided as such with proof of evidence as per table below.

Landfill Capping/Closure Projects

Sl. No	Project Name	Name of the Client	Description of work	Value of Contract (Rs.)	Project Duration	Remarks
(i)			1) Quantity of waste handled / capped: _____ Cum. 2) Supply & installation of Non-woven Geotextile (GT): _____ Sqm. 3) Supply & installation of Geo-synthetic drainage nets (Geo-nets): _____ Sqm. 4) HDPE Liner Laying, Welding and Installation experience for MSW Landfills: _____ Sqm. 5) Vegetative soil layer of minimum 450 mm thick: _____ Sqm.		Start date: End date:	

Landfill Capping/Closure O & M Projects

Sl. No	Project Name	Name of the Client	Activities Performed	Value of Contract (Rs.)	Project Duration	Remarks
(i)						

Note:

- 1) The Bidder should provide the details mentioned above based on its own experience or its subsidiary(ies) or its parent company.
- 2) Bidder to enclose the following documents in support of his technical capacity for bidding:
 - (i) Copy of Agreement with the concerned client or Work Order;
 - (ii) Performance Certificate(s) (completion or currently operating, as the case may be) from its concerned client(s) in support of “the technical qualification” clearly stating the project details

including the contract value for the work completed during the contract period of the project in respect of the projects whose experience is claimed.

- (iii) Performance certificate should be issued from the concerned client(s) (Certificate issued by the officer of rank Executive Engineer/ Project Manager or equivalent and above) shall only be considered.

Financial Qualification

Bidders need to provide detail about the financial capability as per the format provided in tabular form below;

Sl. No	Year	Annual Turnover
1	2016-2017	
2	2017-2018	
3	2018-2019	
	Total	

Note:

- (1) Audited balance sheet of preceding three financial years from the due date of submission of this bid and Certificate(s) from its Statutory Auditors in support of “the Financial qualification” specified in clause 3.6.
- (2) Certificate from its Statutory Auditor/ Chartered Accountant specifying the annual Turnover of the Bidder in preceding three financial years from the due date of submission of this bid.
- (3) The financial year would be the same as the one normally followed by the Bidder for its Annual Report / annual financial statement.

FORM 5A: SATISFACTORY PERFORMANCE CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

This is to certify that M/s. has completed
 “.....”.

Brief Scope of the Work	:	a. Total Quantity of municipal solid waste: b. Foot Print area: c. Height of Landfilling Capping: d. Total Surface area : e. Liners Used: <ul style="list-style-type: none"> • Clay Liner: • 1.5 mm HDPE Liner: • 5 mm Geosynthetic drainage nets: • 350G/M2 Non-woven Geotextile: f. 450 mm Vegetative Layer: g. Sprinkler System: h. RCC Surface drain pipes: i. Storm water drainage: j. Other infrastructure: <ul style="list-style-type: none"> •
Total Contract Value	:	
Operation and maintenance Cost	:	
Operation and maintenance Period	:	
Agreement executed	:	
Project Completion Period	:	

The work done is to the satisfaction of the and is certified that they are capable and experienced to undertake and execute similar projects.

FORM 6: DECLARATION

Name of the Bidder: _____

- 1) I/ We..... hereby declare that I/ We..... have visited the site, conditions of the ground realities and fully acquainted myself/ourselves also with local situations regarding materials, labour and other factors pertaining to the work before submitting the Bid.

- 2) I/ We..... hereby declare that I/ We..... have read the Bid documents and all the addendums made to it till date.

- 3) I/ We..... hereby declare that I/ We..... have carefully studied the conditions of contract and specifications and other documents of this work and agree to execute the same accordingly.

Signature of the Authorized Signatory of the Bidder

FORM 7: FORMAT FOR ANTI-COLLUSION CERTIFICATE

(On the Letterhead of the Bidder)

We hereby certify and confirm that in the preparation and submission of our Bid, we have not acted in concert or in collusion with any other Bidder or other person(s) and also not done any act, deed or thing which is or could be regarded as anti-competitive.

We further confirm that we have not offered nor will offer any illegal gratification in cash or kind to any person or agency in connection with the instant Bid.

Dated thisDay of 2019.

.....
(Name of the Bidder)

.....
(Signature of the Authorized Person)

.....
(Name of the Authorized Person)

FORM 8: FORMAT OF BANK GUARANTEE FOR EMD

WHEREAS, _____[Name of bidder] (hereinafter called “the Bidder”) has submitted his bid dated _____ [Date] for _____ [name of contract] (hereinafter called “the Bid”).

KNOW ALL MEN by these presents that we _____[Name of Bank] of _____ [Name of country] having our registered office at _____(hereafter called “the bank”) are bound into _____ [Name of Employer](hereinafter called” the Employer”) in the sum of _____ for which payment well and truly to be made to the said Employer the Bank binds himself, his successors and assigns by these presents.

SEALED with Common seal of the said bank this _____ day of _____ 2019. THE CONDITIONS of this obligation are:

1. If the bidder withdraws his bid during the period of bid validity specified in the Form of Bid: or
2. If the Bidder refuse to accept the correction of errors in his Bid; or
3. If the Bidder, having been notified of the acceptance of his Bid by the Employer during the period of Bid validity;
 - a. Fails or refuses to execute the form of contract agreement in accordance with the instruction to bidders, if required; or
 - b. Fails or refuses to furnish the performance security, in accordance with the instruction to bidders;

We understand to pay to the Employer up to the above amount up to receipt of its first written demand, without the Employer having to substantiate its demand, provided that in its demand the Employer will note that amount claimed by it is due to its owing to the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____ days after the deadline for submission of bids as such deadline is stated in the instructions to Bidders.

Or as the Employer may extend it, notice of which extension(s) to the hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE _____ SINGATURE OF THE BANK _____

WITNESS _____ SEAL _____

(Signature, Name and Address)

FORM 9: APPROACH & METHODOLOGY

Please describe in not more than 10 pages approach & methodology including work plan (activity schedule in the form of bar chart) & tentative BOQ in accordance with drawing given in Section VI .

FORM 10: FORMAT FOR PRICE BID

Sl. No	Description	Unit	Value of the Work (Rs.)
1	Value of the Work for Closure of dumpsite	Lump sum	
	Total (in words)		

Notes:

1. The amount quoted above is inclusive of all taxes and duties including GST. GST will be paid to the Contractor at applicable rates.

The Schedule of Payment shall be as follows:

Sl. No	Description	Milestone (T= Date of signing of Agreement)	% of Payment
1	Submission of detailed design and construction drawings including implementation plan	T	10%
2	Mobilization of resources at site as per approved design and construction drawings including implementation plan		15%
3	25% of area is recovered		10%
4	50% of area is recovered		10%
5	75% of area is recovered		10%
6	100% of area is recovered		10%
7	Supply of all liners		15%
8	Installation of all liners		15%
9	Completion of vegetative layer and landscaping		5%
	Total		100%

SECTION III: DRAFT CONTRACT AGREEMENT

Draft Contract Agreement Format

This agreement, made the _____ day of _____ 20_____,

Between

Kannur Municipal Corporation, established under the provisions of the Kerala Municipality Act, 1994, acting through its [●] having its principal offices at [●], Kerala [●] hereinafter referred to as “**KaMC or Employer**”, which expression shall unless excluded by or repugnant to the context, be deemed to include its successors and assigns;

AND

XYZ Private Limited, is a Company set up under the Companies Act, 2013, acting through its Chief Executive Officer, having its principal offices at [●], hereinafter referred to as “**Contractor**”, which expression shall unless excluded by or repugnant to the context, be deemed to include its successors and assigns;

Collectively referred to as “Parties”, and individually as “Party”.

Whereas

- a. KaMC is responsible for management of municipal solid waste in the city of Kannur, Kerala including dumpsite of such waste within its municipal limit;
- b. KaMC has nominated KSIDC has its authorised nodal agency to procure the competent contractor to execute the task of Rehabilitation of Municipal Solid Waste dumpsite at Chelora Site (“**Proposed Site**”) in Kannur, Kerala vide the Memorandum of Understanding entered between KaMC and KSIDC dated _____ ;
- c. KSIDC, on behalf of KaMC, has conducted a open and transparent process of selection of a contractor for rehabilitation of the proposed site and found M/s **XYZ Private Limited** has preferred bidder for the said Work;
- d. KaMC now desirous that the Contractor execute Rehabilitation of Municipal Solid Waste dumpsite at Chelora (hereinafter called “the Work”) and the KaMC has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all aspects with the provisions of the Contract.

3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

4. The following documents shall be deemed to form and be read and construed as part of this Agreement,
viz.:
 - i) Letter of Acceptance;
 - ii) Contractor's Bid;
 - iii) Conditions of contract (including Special Conditions of Contract);
 - iv) Specifications;
 - v) Drawings;

In witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of
was hereunto affixed in the presence of:
Signed, Sealed and Delivered by the said

in the presence of:

Binding Signature of Employer

Binding Signature of Contractor

SECTION IV: CONDITIONS OF CONTRACT

SECTION I: CONDITIONS OF CONTRACT

Clause 1: General Conditions of Contract

The General condition of contract shall be read in conjunction with contracts specifications of work, drawings and any other documents forming part of this contract wherever the context so requires. Notwithstanding the subdivision of the documents into these separate sections and volumes every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the contract so far as it may be practicable to do so.

Where any portion of the general conditions of contract is repugnant to or at variance with any provision of the special conditions of contract then, unless a different intention appears, the provisions of the special condition of contract shall be deemed to override the provision of the general conditions of contract and shall to the extent of such repugnancy, or variations, prevail.

The materials, design and workmanship shall satisfy the relevant Indian standard, the job specifications contained herein and codes referred to. Where the job specification stipulate requirement in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied.

Clause 2: Grant of Contract

Subject to and in accordance with the terms and conditions set forth in this Contract, KaMC hereby grants and authorizes the Contractor to investigate, study, engineer, finance and construct landfill cover and to exercise and/ or enjoy the rights, powers, benefits, privileges, authorizations and entitlements as set forth in this Contract.

Clause 3: Handover of Site

KaMC shall, within 15 days from the Appointed Date, handover to the Contractor on as-is where- is basis, vacant and peaceful physical possession of the site free from encumbrance, for the purpose of implementing the project.

Clause 4: Rights, Title and Use of the Site

- a) The Contractor shall have the right to the use of the site in accordance with the provisions of this Contract and for this purpose; it may regulate the entry into and use of the same by third parties.
- b) The site shall be and continue to be the property of KaMC.
- c) The Contractor shall not, without the prior written approval of KaMC, use the site for any purpose other than for the purpose of the project and purposes incidental or ancillary thereto.
- d) The Contractor shall allow access to and use of the site for laying/ installing/ maintaining telegraph lines, electric lines or for such other public purposes as KaMC may specify.

Clause 5: Peaceful Possession

KaMC hereby warrants that:

- a) The site together with the necessary right of way/way-leaves
 - (i) has been acquired through the due process of law
 - (ii) belongs to KaMC and is vested in KaMC and that KaMC has full powers to hold, dispose of and deal with the same consistent, inter alia, with the provisions of this Contract and

that the Contractor shall, in respect of the site, have no liability regarding any compensation payment on account of land acquisition or rehabilitation/ resettlement of any persons affected thereby.

Clause 6: Contractor to obtain his own Information

The Contractor for fixing his rate shall for all purposes whatsoever is deemed to have him independently obtained all necessary information for the purpose of preparing this Bid. The correctness of the details, given in the Bid document to help the Contractor to prepare the Bid is not guaranteed.

The Contractor shall be deemed to have examined the contract document, to have generally obtained his own information in all matters whatsoever, that might affect the carrying out the works at the scheduled rates and to have satisfied himself to the sufficiency of the Bid. Any error in the description or omission of quantity there from shall not vitiate the contract or release the Contractor from executing the work comprised in the contract according to the drawings and specifications at the scheduled rates. He is deemed to have known the scope, nature and magnitude of works and the requirement of material and labour involved and as to what all works he has to complete in accordance with the contract document whatever be the defects, omission or errors that may be found in the contract document. The Contractor shall be deemed to have visited site surroundings to satisfy himself to the nature of all existing structure, if any and also as to the nature and condition of the roads, bridges and culvert, means of transportation and communication and to possible interruption thereto and the access from the site, to have made inquiries, examined and satisfied himself as to the site for obtaining sand, stone, brick and other material, the sites for disposal of surplus material, the available accommodation as to wherever required depots and such other building as may be necessary for executing and completing the works, to have made local independent enquiries as to the subsoil, subsoil water and variation thereof, storm, prevailing winds, climatic conditions and all other similar matter affecting these works. He is deemed to have acquainted himself as to his liability for payment of government taxes, custom duty and other charges.

Any neglect and failure on the part of Contractor in obtaining the necessary reliable information upon the foregoing or any other matter affecting the contract shall not relieve him from any risk or liability or the entire responsibility from completion of work at the scheduled rate and time in accordance with the contract document.

No verbal agreement or inference from conversation with any officer or employee of the corporation either before or after the execution of the contract agreement shall in any way affect or modify any of the terms or obligation herein contained.

Clause 8: Security Deposit

The Bidder whose Bid is accepted (hereinafter called the “Contractor” which shall, unless excluded by, or repugnant to the context include his legal heirs, executors, administrators and assignees) shall submit a Performance Security for a sum of rupees equivalent to 2% of the contract value of the Bid. The balance security deposit after adjusting the EMD shall be deducted proportionately from the payments made to the Contractor.

All compensation, liquidated damages or other sums or money payable by the Contractor to Government under the terms of this contract shall be deducted from or recouped by the realisation of a sufficient part of his security deposit, or from any sums which may due or may become due by KaMC to the Contractor on any account whatsoever and whether in respect of this contract, any other contract, or otherwise. In the

event of his security deposit being reduced by reason or any such deduction or recoupment as aforesaid, the Contractor shall within ten days thereafter, make good in cash or in Government securities transferred as aforesaid any sum or sums required to make good the shortfall in the amount of the security deposit.

Clause 9: Liquidated damages for delay

If the Contractor fails to achieve the milestones as under contract by the stipulated date, he shall pay liquidated damages of Rs.0.01% of the balance work of corresponding milestone per day from the date of delaying the said work up to the date of completion and handing over to KaMC and shall be subject to the maximum amount of Five percentage of the estimated amount put to Bid.

Delays requiring payment of Five percentage liquidated damages of the amount put to Bid for performance shall be sufficient cause for termination of contract and for forfeiture of performance security deposit and registration of the Contractor shall also be kept in abeyance for three years from the date as fixed in all cases.

Clause 10: Default by Contractor

If the Contractor shall neglect or fail to proceed with the work with due diligence or if he violates any of the provision of the Contract, the Engineer-in-charge of KaMC shall give the Contractor a notice, identifying deficiencies in performance and demanding corrective action. Such notice shall clearly state that it is given under the provision of this Clause. After service of such notice, the Contractor shall not remove any plant, equipment and material from the site. The KaMC, shall have a lien on all such plant, equipment and material from the date of such notice till the said deficiencies have been corrected as mentioned in the said notice.

If the Contractor fails to take satisfactory corrective action within ten days after receipt of such notice, the Engineer-in-charge of KaMC shall terminate the contract in whole. In case, the entire contract is terminated, the amount of security deposit together with the value of the work done but not paid for, shall stand forfeited to the KaMC. The plants, equipment and materials, held under this Clause shall then be at the disposal of the KaMC to recover the amount equivalent to the liquidated damages and registration of the Contractor shall be kept in abeyance for three years from the date as fixed in all such cases.

The Engineer-in-charge if necessary shall direct that a part or the whole of such plant, equipment and material be removed from the site within a stipulated period. If the Contractor fails to do so, the Engineer-in-charge shall cause them or any part of them to be sold holding the net proceeds of such sale to the credit of the Contractor. After settlement of accounts, the lien by the KaMC of the Contractor's remaining plant equipment and balances of materials shall be released.

Termination of the contract in whole shall be an adequate authority for the Engineer-in charge to demand discharge of the obligations from the guarantors of the security for the performance.

Clause 11: Unsatisfactory progress by Contractor

If the progress of any particular portion of the work under contract is unsatisfactory, the Engineer-in-charge shall, notwithstanding that the general progress of the work is satisfactory, in accordance with Clause 9 be entitled to take necessary action under Clause 10, after giving the Contractor ten days' notice in writing and the Contractor shall have no claim whatsoever for any compensation for any loss caused to him due to such action.

Clause 12: Non-exercise of powers under Clause 10 not a waiver:

In any case in which any of powers conferred upon the Engineer-in-charge by Clause 10 hereof shall have become exercisable and the same shall not have been exercised, the non-exercise thereof shall not constitute waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable at any future date.

Clause 13: Powers to seize tools, plants, machineries, materials and stores of the Contractor on invocation of Clause 10:

In the event of the Engineer-in-charge taking action under Clause 10, he may, if so desire, take possession of all or any tools, plants, machineries, materials and stores in or upon the work or the site thereof or belonging to the Contractor or procured by him and intended to be used for the execution of the work or any part thereof, by paying or allowing for the same in account at the contract rate or in case of contract rates not being applicable at such reasonable rates, as may be comparable to current market rates where ascertainable of similar articles and comparable condition, to be certified by the Engineer-in-charge. Alternatively, the Engineer-in-charge may by notice in writing to the Contractor or his clerk of the works foreman or other authorised agent require him to remove such, tools, plants, machineries, materials or stores from the premises within a time to be specified in such notice and in the event of the Contractor failing to comply with any such requisition, the Engineer-in-charge may remove them at the Contractor's expense or shall remove them by auction or private sale at the risk and cost of the Contractor in all respects, and the certificate of the Engineer-in charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such removal shall be final and conclusive against the Contractor.

Clause 14: Extension of Time:

If the Contractor shall desire an extension of the time for completion of the work on the ground of his having been unavoidably hindered in its execution or any other ground he shall apply in writing to the Engineer-in-charge before the expiration of the period stipulated in the Bid or before the expiration of 30 days from the date on which he was hindered whichever is earlier and the Engineer-in-charge may, if in his opinion, believe that there are reasonable grounds for granting an extension, grant such extension, as he thinks necessary or proper. The decision of the Engineer-in-charge in this matter shall be final.

Clause 15: Final measurement and final bill on completion of work

As soon as the work is completed, the Contractor shall give a notice of such completion to the Engineer-in-charge and on receipt of such notice the Engineer-in-charge shall inspect the work and if he is satisfied that the work is completed in all respects then

- (i) The completion certificate shall be issued within one month from the date of the notice of work completion subject to the Contractor fulfilling his obligation as provided in the contract and subject to the work being complete in all respects.

When separate period of completion has been specified for items or groups of items, the Engineer-in-charge shall issue, separate completion certificate for such items or groups of items.

No certificate of completion shall be issued nor shall the work be considered to be complete till the Contractor shall have removed from the premises, on which the work has been executed, all scaffoldings, sheds and surplus materials, except such, as are required for rectification of defects; rubbish and all huts and sanitary arrangements required for his workmen on the site in connection with the execution of the work, as shall have been erected by the Contractor for the workmen and cleared all dirt from all parts of building(s) in, upon or around which the work has been executed or of which he may have possession for

the purpose of the execution thereof and cleared floors, gutters and drains, cased doors and sashes, oiled locks and fastenings labeled keys clearly and handed them over to the Engineer-in-charge or his representative and made the whole premises fit for immediate occupation or use to the satisfaction of the Engineer-in-charge. If the Contractor shall fail to comply with any of the requirements, of these conditions as aforesaid, on or before the date of completion of the works, the Engineer-in-charge may, at the expense of the Contractor, fulfill such requirements and dispose of the scaffolding, or surplus materials and rubbish, as he thinks fit and the Contractor shall have no claim in respect of any such scaffolding or surplus materials, except for any sum actually released by the sale thereof less the cost of fulfilling the requirements and any other amount that may be due from the Contractor. If the expenses of fulfilling such requirements are more than the amount realized from such disposal as aforesaid the Contractor shall forthwith, on demand, pay such excess. The Engineer-in-charge shall also have the rights to adjust the amount of excess against any amounts that may be payable to the Contractor.

Clause 16: Intermediate and final payments:

The Contractor shall on submitting an intermediate bill be entitled to receive payment proportionate to the part of the work then approved and passed by the Engineer-in-charge, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the Contractor. All such intermediate payments shall be regarded as payments by way of advance against the final payments only and not as payments for work actually done and completed and shall not preclude the Engineer-in-charge from requiring bad, unsound, imperfect or unskilled work to be removed and taken away and reconstructed, or re-erected, nor shall any such payment be considered as an admission of the due performance of the Contractor or any part therefore in any respect or the accruing of any claims, nor shall it conclude, determine, or affect in any way the power of the Engineer-in-charge as to the final settlement and adjustment of the accounts or otherwise or in any other way vary or effect the contract. The final bill shall be submitted by the Contractor within one month of the completion of the work, otherwise the Engineer-in-charge's certificate of the measurements and of the total amount payable for the work shall be final and binding on all parties.

Clause 17: Payment at reduced rates:

The rates for items of works shall be valid only when the items concerned is accepted as having been competed fully in accordance with the sectional specifications, In cases where the items of work are accepted as not so completed, the Engineer-in-charge may make payment on account of such items at such reduced rates as he may consider reasonable in preparation of final or on account bill.

Clause 18: Bills to be submitted on achieving each milestone:

A bill shall be submitted by the Contractor upon achieving a milestone and Engineer-in-charge shall take or cause to be taken the requisite measurement for the purpose of having the same verified and the claim, so far as it is admissible, shall be adjusted, if possible, within ten days from the presentation of the bill.

Clause 19: Bills and rates payable:

The Contractor shall submit all the bills on the printed forms at the office of the Engineer-in-charge. The charges to be made in the bills shall always be entered at the rates specified in the agreement or at the partly reduced rates subject to the approval by the Engineer-in-charge. In the case of Items not completed/executed as per agreements or in the case of any extra work ordered in pursuance of these conditions and not mentioned or provided for in the Bid, at the rate here in after provided for such work.

Clause 20: Drawings, Designs, Instructions of the Engineer in-charge and specifications, order of precedence in case of discrepancies

- 1) The Contractor shall execute the whole and every part of the work in the most substantial and workman-like manner and both as regards materials and in other respects in strict accordance with specifications.
- 2) The Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions developed by the Contractor and approved by the Engineer-in-charge in writing for the work assigned. The design and the drawings shall be made available with the Engineer-in-charge the three (3) sets free of cost for the purpose of approvals and future reference.

Where the instructions referred to above are not contained in separate letters addressed to the Contractor the same shall be recorded in the work-order book, which shall be maintained and kept on the site of the work. The Contractor shall be required to sign such entries in the work-order book in token of having noted the instructions. However, if the Contractor fails to sign the work-order book for any reason whatsoever, the entry of the instructions in the work-order book shall be deemed to be the due notice to him of the said instructions. The work-order book shall be open for inspections to the Contractor on the site of the work during office hours.

- 1) The Contractor will be entitled to receive one copy of the accepted Bid along with the work order free of cost.
- 2) The several documents forming the contract are essential parts of the contract and requirements occurring in one is binding as through occurring in all. They are intended to be mutually explanatory and complimentary and to describe and provide for a complete work.

In the event of any discrepancy in the several documents, the following order of precedence should apply:

1. Bill of Quantities developed by the Bidder and approved by Engineer-in-charge
2. Drawings developed by the Bidder and approved by the Engineer-in-charge
3. Specifications in Special Condition of Contracts

In the case of defective description or ambiguity, the Engineer-in-charge is entitled to issue further instructions directing in what manner the work is to be carried out. The Contractor cannot take any advantage of any apparent error or omission in drawings or specifications and the engineer-in-charge shall be entitled to make corrections and interpretations as necessary to fulfill the plans and specification.

Clause 21: Excess over Bid quantities, extra items and variations:

- 1) The Engineer-in-charge shall have the power to make any alterations in or addition to the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work and the Contractor shall be bound to carry out the work in accordance with any instructions in this connection which may be given to him in writing signed by the Engineer-in-charge and such alternation shall not invalidate the contract and any additional work which the Contractor may be directed to do in the manner above specified as part of the work shall be carried out by the Contractor on the same conditions in all respects on which he agreed to do the main work and at the same rate as are specified in the Bid for the main work.
- 2) Except that when the quantity of any item exceeds the quantity as in the Bid by more than 15% the Contractor will be paid for the quantity in excess of 15% at the rate entered in the S.O.R. of the year during which the excess in quantity is first executed and for the materials consumed in

excess quantity the rate for the materials to be charged would be the basic rate taken into account for fixing the rate for the S.O.R.

- 3) If the additional or altered work includes any class of work for which no rate is specified in this contract, then such class of work shall be carried out.
 - (i) At the rate derived from the item within the contract which is comparable to the one involving additional or altered class of work; where there are more than one comparable items, the item of the contract which is nearest in comparison with regard to class or classes of the work involved shall be selected and the decision of the Superintending Engineer as to the nearest comparable item shall be final and binding on the Contractor.
 - (ii) If the rate cannot be derived in accordance with (i) above, such class of works shall be carried out at the rate entered in the Schedule of Rates of the Division for the year in which the Bid was received, increased or decreased by the percentage by which the Bid amount is more or less as compared to the amount arrived at the rates in the "Schedule of Rates" of the Division in the year in which the Bid was received. If the Schedule of rates of the Division does not contain all the items, the percentage increase or decrease of the Bid shall be calculated considering such items which were included in the "Schedule of Rates" of the Division for the year and for materials consumed on such item the rate to be charged would be the basic rate taken into account for fixing the rate in S. O. R. referred to above.
 - (iii) If it is not possible to arrive at the rate from (i) and (ii) above, such class of work shall be carried out at the rate decided by the competent authorities on the basis of detailed rate analysis after hearing the Contractor before a Committee of two superintending Engineers stationed at the same place or the nearest place.

- 4) If the additional or altered work, for which no rate is entered in the "Schedule of Rates" of the Division is ordered to be carried out before the rate is agreed upon, then the Contractor shall within seven days of the date of receipt by him of the order to carry out the work, inform the Engineer-in-charge of the rate, which it is his intention to charge for such class of work and if the Engineer in charge does not agree to this rates, he shall by notice in writing be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he may consider it advisable, provided always that if the Contractor shall commence work or incur any expenditure in regard thereof before the rates shall have been determined as lastly herein before mentioned, then in such cases he shall only be entitled to be paid ;In respect of the work carried out or expenditure incurred by him prior to the date of the determination of the rate as aforesaid according to such rate or rates as shall be fixed by the Engineer-in-charge. In the event of the dispute, the decision of the Superintending Engineer shall be final.

Where, however, the work is to be executed according to the designs, drawings and specifications recommended by the Contractor and accepted by the competent authority, the alternation above referred to shall be within the scope of such designs, drawings and specifications appended to the Bids.

The time limit for the completion of the work shall be extended in the proportion that the increase in the cost occasioned by alternations bears to the cost of the original contract work and the certificate of the Engineer-in-charge as to such proportion shall be final and conclusive.

Clause 22: No claim for any payment of compensation for change or restriction of work

If at any time after the execution of the contract documents the Engineer-in-charge shall for any reason whatsoever, require the whole or part of the work, as specified in the Bid, be stopped for any period or shall not require the whole or part of the work to be carried out at all or to be carried out by the Contractor, he shall give notice in writing, stating the fact to the Contractor who shall thereupon suspend or stop the work totally or partially, as the case may be. In any such case, except as provided hereunder, the Contractor shall have no claim to any payment or compensation whatsoever except as provided hereunder on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not so derive in consequence of the full amount of the work not having been carried out, or on account of any loss that he may be put to on account of materials purchased or agreed to be purchased or for unemployment of labour required by him. He shall not have also any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions which may involve any curtailment of the work as originally contemplated.

- (1) However, the Contractor will be entitled for compensation for loss, if any on the date of notice, for the purchased materials or for the contract executed for the material to be purchased for such work. Such compensation will be paid only for actual loss for materials, if such materials so purchased or agreed to purchase is of required quantity/ quality and was purchased / contracted to be purchased only for the same work. But no compensation shall be granted to Contractor on material for which advance has been given to Contractor by KaMC. The amount of loss for such claim will be decided by Engineer-in-charge.
- (2) The Contractor also will be entitled for compensation of unemployed labourers for 7 days from the date of notice provided that in that opinion of Engineer-in-charge such labourers were working for 7 days prior to the notice and would not be in a position to get employment elsewhere within 7 days from the date of such notice. The Contractor should try to employ such unemployed labourers at other places from the date of such notice. The Contractor shall not be entitled for loss of any expected profit of such work.

Clause 23: Time limit for unforeseen claims

The Contractor shall not be entitled to any compensation from KaMC on any account unless where allowed by the conditions of this contract. In such cases, the Contractor shall have to submit a claim in writing to the Engineer-in-charge within one month of the cause of such claim occurring.

Clause 24: Action & compensation in case of bad work

If, at any time before the expiry of Defects Liability period as detailed in Clause 25, it shall appear to the Engineer-in-charge or his sub-ordinate in charge of the work that any work has been executed unsound, imperfect or unskilled workmanship or with materials of inferior quality or that any materials or articles provided by him for the execution of the work are unsound, or of a quality inferior to that contracted for or are otherwise not in accordance with the contract, it shall be lawful for the Engineer-in-charge to intimate this fact in writing to the Contractor and then notwithstanding the fact that the work, materials or articles complained of may have been passed, certified and paid for the Contractor shall be bound forthwith to rectify, or remove and reconstruct the work so specified in whole or in part as the case may require, or if so required, shall remove the materials or articles so specified in whole or in part and provide other proper and 'suitable materials or articles at his own charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-in charge in the written intimation aforesaid, the Contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate of the rectification for every day not exceeding ten days during which the failure so continues, and in the event of any such failure as aforesaid continuing beyond ten days, the Engineer-in-

charge may rectify or remove, and re-execute the work or remove and replace the materials complained of as the case may be at the risk and expense in all respects of the Contractor. Should the Engineer-in-charge consider that any such inferior work or materials as described above may be accepted or made use of, it shall be within his discretion to accept the same at such reduced rates as he may fix therefore.

However, the Contractor shall be responsible for normal maintenance of the work till the final bill for the work is prepared by the Employer.

Clause 25: Defects Liability Period

The Contractor shall be responsible to make good and remedy at his own expense any defect, which may develop or may be noticed before the period mentioned hereunder from the certified date of completion. The same should be done within 15 days of receipt of the notice. In the case of failure on the part of the Contractor, the Engineer-in-charge may rectify or remove or re-execute the work at the risk & cost of the Contractor. The Engineer-in-charge shall be entitled to appropriate the whole or any part of the amount of security deposit towards the expenses, if any, Incurred by him in rectification, removal or re-execution. The Defects Liability period shall be 12 months from the certified date of completion, which should include one monsoon.

Clause 26: Work to be open to inspections - Contractor or responsible agent to be present

All works under or in course of execution or executed in pursuance of the contract shall, at all times be open to the inspection and supervision of the Engineer-in-charge and his subordinates and the Contractor shall, at all times during the usual working hours, and all other times for which reasonable notice of the intimation of the Engineer-in-charge or his subordinate to visit the works shall have been given to the Contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing present for that purpose. Orders given to the Contractor's duly authorized agent shall be considered to have the same force and effect as if they had been given to the Contractor himself.

Clause 27: Notice to be given before work is covered up

The Contractor shall give not less than five days' notice in writing to the Engineer-in-charge or his subordinate in charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions there of taken before the same is so covered up or placed beyond the reach of measurement and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or consent obtained, the same shall be uncovered at the Contractor's expense and in default thereof, no payment or allowance shall be made for such work or for the materials with which the same was executed.

Clause 28: Damage to contract work-in-progress and damages to surrounding properties:

If the Contractor or his workmen, or servants shall break, deface, injure or destroy any part of the building or the work in question in/ on which they may be working or any building, road, fence, enclosure or grassland or cultivated ground contiguous to the premises on which the works or any part thereof is being executed or if any damage shall be done to the work ' from any cause whatever before damage occurred/caused due to normal flood or rain or if any imperfections become apparent in it within three months from the grant of a certificate of completion, final or otherwise by the Engineer-in-charge, the Contractor shall make good the same at own expenses or in default, the Engineer-in-charge may cause the same to be made good by other Contractor, and deduct the expenses (of which the certificate of the Engineer in- charge shall be final) from any sums that may thereafter become due to the Contractor or from his security deposit or the proceeds of sale thereof or a sufficient portion thereof.

Clause 29: Damages due to acts of God and unprecedented floods

Neither party shall be liable to the other for any loss or damage occasioned by or arising out of acts of God, such as Unprecedented flood, Volcanic eruption, earthquake or other convulsion of nature and other acts such as but not restricted to general strike, invasion, the acts of foreign countries, hostilities, or war like operations before or after declaration of war, rebellion, military or Usurped power which prevent performance of the contract and which could not have been foreseen or avoided by a prudent person.

Note: "Unprecedented flood" means the flood crossing the High Flood Level of the past 100 year(s) which is on the available record.

Clause 30: Contractor to supply plant, ladders, scaffolding etc. and is liable for damage arising from non-provision of lights, fencing etc.:

The Contractor shall supply at his own cost all materials plant, tools, appliances, implements, ladders, cordage, tackle, scaffolding, and any temporary works which may be required for the proper execution of the work whether in the original, altered or substituted form and whether included in the specifications, or other documents forming part of the contract or referred to in these conditions or not and which may be necessary for the purpose of satisfying or complying with requirements of the Engineer- in-charge as to any matter or to which under these conditions he is entitled to be satisfied or which he is entitled to require together with carriage there for to and from the work. The Contractor shall provide all necessary fencing and lights required to protect the public from accident.

Clause 31: The Contractor shall provide suitable scaffolds and working platforms, gangways and stairways, etc.

The Contractor shall provide suitable scaffolds and working platforms, gangways and stairways, and shall comply with the following regulations in connection therewith.

- a) Suitable scaffolds shall be provided for workmen for all works that cannot be safely done from a ladder or by other means.
- b) A scaffold shall not be constructed, taken down or substantially altered except - (i) Under the supervision of a competent and responsible person. (ii) appointed by Contractor and by competent workers possessing adequate experience in this kind of work.
- c) All scaffolds and appliances connected the with and all ladders shall – (i) be of sound material (ii) be of adequate strength having regard to the loads and strains to which they will be subjected, and, (iii) be maintained in proper condition
- d) Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
- e) Scaffolds shall not be overloaded and so far as practicable the load shall be evenly distributed.
- f) Before installing the lifting gear on scaffolds, special precaution shall be taken to ensure the strength and stability of the scaffolds.
- g) Scaffolds shall be periodically inspected by a competent person.
- h) Before allowing a scaffold to be used by his workmen, the Contractor shall, whether the scaffold has been erected by his workmen or not, take steps to ensure that it complies fully with the regulation herein specified.
- i) Working platforms, gangways shall (i) be so constructed that no part thereof can dag unduly or unequally, (ii) be so constructed and maintained having regard to the prevailing conditions as to reduce as far as practicable risks of persons tripling or slipping and (iii) be kept free from any unnecessary obstruction.

- j) In the case of working platforms, gangways working places and stairways at a height exceeding 2.00 metre (to be specified) (i) every working platform and every gangway shall be closely boarded unless other adequate measures are taken to ensure safety. (ii) every working platform and every gangway shall have adequate width, and (iii) every working platform, gangway, working place and stairway shall be suitably fenced.
- k) Every opening in the floor of a building or in a working platform shall, except for the time and to the extent required to allow the access of person or the transport or shifting of materials. be provided with suitable means to prevent the fall of persons or material.
- l) When persons are employed on a roof where there is danger of falling from a height exceeding 3.00 (to be specified) meters suitable precaution shall be taken to prevent the fall of persons or material.
- m) Suitable precautions shall be taken to prevent persons being struck by articles which might fall from scaffold or other working places.
- n) Safe means of access shall be provided to all working platforms and other working places.

Clause 32: Hoisting Appliances

The Contractor shall comply with the following regulations as regards the hoisting appliances to be used by him.

Hoisting machines and tackle including their attachments, anchorages and supports shall (i) be of good mechanical construction, sound material and adequate strength and free from patent defect, and (ii) be kept in good repair and in working order.

- a) Every rope used in hoisting or lowering materials or as a means of suspension shall be of suitable quality and adequate strength and free from patent defect.
- b) Hoisting machines and tackles shall be examined and adequately tested after erection on the site and before use and be re-examined in position at intervals to be prescribed by Engineer-in-charge.
- c) Every chain, ring, hook, shackle, swivel and pulley block used in 'hoisting or lowering materials or as a means of suspension shall be periodically examined.
- d) Every crane driver or hoisting - appliance operator shall be properly qualified,
- e) No person who is below age of 15 years shall be in control of any hoisting machine, including any scaffolds, nor shall give signals to the operator.
- f) In the case of every hoisting machine and of every chain ring hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension the safe working load shall be ascertained by adequate means.
- g) Every hoisting machine and all gears referred to in preceding regulation shall be plainly marked with the safe working load.
- h) In the case of hosting machine having a variable safe working load, each safe working load and conditions under which it is applicable shall be clearly indicated.
- i) No part of any hoisting machine or gear referred to in regulation 'g' above shall be loaded beyond the safe working load except for the purpose of testing.
- j) Motors, gears, transmissions, electric wiring and other 'a. dangerous parts of hoisting appliances shall be provided with sufficient safeguards.
- k) Hoisting appliances shall be provided with such means as will reduce to a minimum the risk of the accidental descent of the load.
- l) Adequate precautions shall be taken to reduce to minimum the risk of any part of a suspended load becoming accidentally displaced.

Clause 33: Measures for prevention of Fire

The Contractor shall not set fire to any standing jungle, trees, bush wood or grass without a written permit from the Engineer-in-charge. When such permit is given, and also in all cases when destroying cut or dug up tress, bush wood, grass etc. by fire, the Contractor shall take necessary measures to prevent such fire spreading to or other-wise damaging surrounding property. When such permit is given, and also in all cases when destroying cut or dug up tress, bush wood, grass etc. by fire, the Contractor shall take necessary measures to prevent such fire spreading to or otherwise damaging surrounding property.

Clause 34: Liability of Contractors for any damages done in or outside work area

Compensation for all damage done intentionally or unintentionally by Contractor's labourers whether in or beyond limits of KaMC property including any damage caused by the spreading of fire mentioned in the Clause 33, shall be estimated by the Engineer-in-charge, or such other Officer as he may appoint and the estimates of the Engineer-in-charge, shall be final and the Contractor shall be bound to pay the amount of the assessed compensation on demand, failing which the same will be recovered from the Contractor as damages in the manner prescribed in Clause 8 or deducted by the Engineer-in-charge from any sums that may be due or become due from KaMC to the Contractor under this contract or otherwise.

The Contractor shall bear the expenses of defending any action or other legal proceeding that may be brought by any person for injury sustained by him owing to neglect of precautions to prevent the spread of the fire and he shall also pay the damages and cost that may be awarded by the court in consequence.

Clause 35: Work not to be sublet

Contract may be rescinded and security deposit forfeited for subletting it without approval or for bribing a public officer or if Contractor becomes insolvent: The contract shall not be assigned or sublet without the written approval of the Engineer-in-charge. And if the Contractor shall assign or sublet his contract or attempt to do so or become insolvent or commence any proceeding to get himself be adjudicated an insolvent or make any compromise with his creditors or attempt to do so, the Engineer-in-charge may, by notice in writing rescind the contract, Also if any bribe, gratuity, gift, loan, perquisite, reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given, promised or offered by the Contractor, or any of-his servants or agents to any public officer or person in the employ of KaMC in anyway relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in contract, the Engineer-in charge may thereupon by notice in writing rescind the contract. In the event of contract being rescinded, the security deposit of the Contractor shall thereupon stand forfeited and be absolutely at the disposal of KaMC and the same consequence shall ensure as if the contract had been rescinded under Clause 10 hereof and in addition the Contractor shall not be entitled to recover or be paid for any work there for actually performed under the contract.

Clause 36: Sums payable by way of compensation to be considered as reasonable compensation without reference to actual loss:

All sums payable by a Contractor by way of compensation under any of these conditions shall be considered as a reasonable compensation to be applied to the use of KaMC without reference to the actual loss or damage sustained and whether any damage has or had not been sustained.

Clause 37: Change in the constitution of firm to be notified:

In the case of a Bid by partners, any change in the constitution of a firm shall be forthwith notified by the Contractor to Engineer-in-charge for his information.

Clause 38: Works to be under directions of Chief Engineer/ Engineer in charge:

All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of Chief Engineer/Engineer in charge of KaMC for the time being, who shall be entitled to direct at what point or points and in what manner they are to be commenced and from time to time carried on.

Clause 39: Disputes to be referred to Tribunal:

1. The disputes relating to this contract, so far as they relate to any of the following matters, whether such disputes arise during the progress of the work or after the completion or abandonment thereof, shall be referred to the Arbitration Tribunal as notified by KaMC.
 - (i) The rates of payment under Clause 13 for any tools, materials and stores, in or upon the works of the site thereof or belonging to the Contractor or procured by him and intended to be used for execution of the work or any part thereof possession of which may have been taken by the Engineer-in-charge under the said Clause - 13.
 - (ii) The reduction in rates made by the Engineer-in-charge under Clause 9 from the items of works not accepted as completed fully in accordance with the sanctioned specifications.
 - (iii) The rate of payment for any class of work which is included in the additional or altered work carried out by the Contractor in accordance with the instructions of the Engineer-in-charge under Clause 21 and the rates for which is to be determined under the said Clause 21.
 - (iv) The rates of payment for materials already purchased or agreed to be purchased by the Contractor before receipt of notice given by the Engineer-in-charge under Clause 15, and/or the amount of compensation payable to the Contractor under the said Clause for loss in respect of such materials.
 - (v) The amount of compensation which the Contractor shall be liable to pay under Clause 24 in the event of his failure to rectify, remove or reconstruct the work within the period specified in the written intimation or the amount of expenses incurred by the Engineer-in-charge under the said Clause 24 in rectifying, removing or re-executing the work or in removing and replacing the materials or articles complained of.
 - (vi) The reduction of rates as may be fixed by the Engineer-in-charge under Clause 24 for the interior work or materials as accepted or made use of.
 - (vii) The amount of compensation payable by the Contractor for damages as estimated and assessed under Clause 34.
 - (viii) The amount payable to the Contractor for the work carried out under Clause 41 in accordance with the instructions and the requirements of the Engineer-in-charge in a case where there are no specifications.
2. The provision of Arbitration Act, shall in so far as they are inconsistent with the provision of this Act cease to apply to any dispute arising from a works contract and all arbitration proceedings in relation to such dispute before an arbitrator, court of authority shall stand transferred to the Tribunal.
3. The awards declared by the arbitrator should be speaking award, giving reasons and calculations for every item of claims. The decision will have to be implemented by all the departments of the State Govt. and Public Sector Enterprises of Kerala.
4. In case of dispute leading to the Contractor or Govt. of Kerala approaching to Court of Law, it shall be within the jurisdiction where the site of work is situated.

5. The reference to arbitration proceeding under this Clause shall not (i) affect the right of the Engineer-in-charge under Clause 13 to take possession of all or any tools plants, materials and stores in or upon the works of site thereof belonging to the Contractor or procured by him and intended to be used for the execution of the work or any part thereof. (ii) Preclude the Engineer-in-charge from utilising the materials purchased by the Contractor in any work or from removing such materials to other places, during the period the work is stopped or suspended in pursuance of notice giver to the Contractor under Clause 22. (iii) Entitle the Contractor to stop the progress of the work or the carrying out the additional or altered work in accordance with the provisions of Clause 21 or as the case may be, of Clause 41.

Clause 40: Lump sum in estimates

When the estimate on which a Bid is made includes lump sum in respect of part of the work, the Contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not in the opinion of the Engineer-in-charge capable of measurement, the Engineer-in-charge may, at his discretion, pay the lump sum amount entered in the estimate and the certificate in writing of the Engineer-in-charge shall be final and conclusive against the Contractor with regard to any sum or sums payable to him, under the provisions of this Clause.

Clause 41: Action where there are no specifications

In the case of work for which there is no such specification, such work shall be carried out in accordance with the Divisional Specification and in the event of there being no Divisional Specifications, then, in such case the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-charge.

Clause 42: Definition of work

The expression "work" or "works" where used in these conditions shall, unless, there be something in the subject or context repugnant to such construction be construed to mean the work, or the works, contracted to be executed under or in virtue of the contract. Whether temporary or permanent and whether original, altered, substituted or additional.

Clause 43: Compensation under the Workmen's Compensation Act:

The Contractor shall be responsible for paying compensation to his workman payable under the Workmen's Compensation Act. 1923 (VIU of 1923, hereinafter called the said Act) for injuries caused to the workmen, if such compensation is paid by KaMC as principal under sub section 12(1) of the said Act on behalf of the Contractor it shall be recoverable by KaMC from the Contractor under sub-section. 12 (2) of the said section. Such compensation shall be recovered in the manner laid down in Clause 8 above.

Clause 44: Medical aid to worker for bodily injury

The Contractor shall be responsible for and shall pay the expenses of providing medical aid to any workmen who may suffer a bodily injury as a result of an accident If such expenses are incurred by KaMC, the same shall be recoverable from the Contractor for with and be deducted, without prejudice to any other remedy of KaMC from amount due or that may become due to the Contractor.

Clause 45: Personal safety equipment and first aid apparatus

The Contractor shall provide all necessary personal safety equipment and first aid apparatus available for use of the person employed on the site and shall maintain the same in suitable condition for immediate use at any time.

Clause 46: Quantity Analysis

The quantities shown in the Bid are approximate and no claim shall be entertained for quantities of work execute being less than those entered in the Bid. In the case quantities by more than 30 % the new rate will be paid to the Contractor for the quantities in excess of 30%. The rates for the increased quantities as aforesaid will be fixed in the manner specified in Clause 21.

Clause 47: Delay in starting

No compensation shall be allowed for any delay caused in the starting of the work or account of delay in making available the full site of land at a time.

Clause 48: Delay in Execution

No claim for compensation shall be allowed for any delay in execution of the work on account of water standing in borrow pits or compartment. The rates are inclusive of hard or cracked soil, excavation in mud, sub soil water or water standing in borrow-pits and no claim for an extra rate shall be entertained unless otherwise expressly specified.

Clause 49: Entering upon or commencing any portion or work

The Contractor shall not enter upon or commence any portion or work except with the written authority and instruction of the Engineer-in-charge or of his subordinate in charge of the work. Failing such authority, the Contractor shall have no claim to ask measurement of or payment for work.

Clause 50: Minimum age of person employed

No Contractor shall employ any person who is under the age of 15 years.

Clause 51: Payment of fair wages

The Contractor shall pay fair and reasonable wages to the workman employed by him in the contract undertaken by him. In the event of any dispute arising between the Contractor and his workmen on the grounds that the wages paid are not fair and reasonable, the dispute shall be referred without delay to the Engineer-in-charge who shall decide the same. The decision of the Engineer-in-charge shall be conclusive and binding on the Contractor, but such decision shall not in any way affect the conditions in the contract regarding the payment to be made by KaMC at the sanctioned Bid rates.

- (i) The Contractor shall provide drinking water facilities to the workers / labourers employed on works. Amenities relating to sanitation shall also be provided to the workers/ labourers employed on works. If the Contractor fails to comply with 'these provisions', the Engineer-in-charge shall give notice in writing and if the Contractor does not provide this facility to the workers/ labourers within a period of ten days from the date of the notice in writing, the Engineer-in-charge shall thereupon make the arrangement for drinking water at the cost of the Contractor.
- (ii) The Contractor shall provide the amenity of proper shade and shelter to the workers/ labourers and their children on work as soon as the work starts. If the Contractor fails to provide shed and shelter, the Engineer-in-charge shall provide the same at the cost of Contractor.

Clause 52: Method of payment

Payment to Contractor shall be made by means of NEFT/RTGS transfer to the account of the contractor or cheque drawn on any treasury within the division convenient to them, provided the amount exceeds Rs.10 (Amount not exceeding Rs.10 will be paid in cash).

Clause 53: Rates exclusive of GST

The rates to be quoted by the Contractor must be inclusive of all applicable taxes except GST. GST if applicable shall be paid extra. No extra payment on this account will be made to the Contractor.

Clause 54: Fair Wages

If the Contractor fails to pay within '7' (Seven) days to the labourer(s)/worker(s) the minimum wages prescribed by the KaMC under the Minimum Wages Act, 1948 as in force from time to time, the Engineer-in-charge shall be at liberty to deduct the amount payable to the labourer(s)/workers from his (Contractors') bills or deposit(s) payable by the Contractor after making due inquiries and establishing the claim(s) of the labourer(s)/worker(s).

Clause 55: List of Machinery

The Contractors shall also give a list of machineries in his possession and which they propose to use on the work.

Clause 56: Local labour on normal rates

The Contractor shall have to engage local labour and person seeking available on normal rate.

Clause 57: Vaccination of labour

The Contractor shall employ only such labour who shall produce a valid certificate of having been vaccinated against small pox within a period of last three years.

Clause 58: Worker Amenities

Drinking water: The Contractor shall as far as possible provide an adequate supply of chlorinated pure potable drinking water for the use of labourers. This provision shall be at the rate of minimum 4.5 liters per head, where there is a suitable drain, river or well within 0.4 kms of the camp. However, arrangement should as far as possible, be made to chlorinate water by chlorinated tablets before it is allowed for drinking purpose.

Toilet facility: The Contractor shall construct semi-permanent latrines for the use of labourers on the following scale, namely; (a) Where females are employed, there shall be at least one latrine for every 25 females (b) Where males are employed, there shall be at least one latrine for every 25 males provided that where the number of males or female exceed 100, it shall be sufficient if there is one latrine for every 25 males or females, as the case may be up to the first 100 and one for every 50 thereafter.

Privacy in latrines: Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.

Notice to be displayed outside latrines and urinals: Where workers of both sexes are employed there shall be displayed outside each block of latrine and urinal a notice in the language understood by the majority of the workers for Men Only or for Women Only: as the case may be. The notice shall also bear the figures of a man or of women, as the case may be.

Urinals: There shall be at least one urinal for male/female workers up to 50 employed at a time. Provided that where the number of male or female workmen, as the case may be, exceeds 500. It shall be sufficient if there is one urinal for every 50 males or females up to the first 500 and one for every 100 males or females or part thereof.

Latrines and Urinals to be accessible: (i) The latrines and urinals shall be conveniently situated and accessible to workers at all times at the establishment. (ii) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times (iii) Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the Public Health Authorities. Water for latrines and urinals: Water shall be provided by means of pipes or tanks or otherwise, so also be conveniently accessible in or near the latrines and urinals. Bathing and washing places: (1) the Contractor shall construct sufficient number of bathing places; every unit of 20 persons being provided with a separate bathing place. (2) Washing places should also be provided for the purposes of washing clothes. Every unit of 30 persons shall have at least one washing place. (3) such bathing and washing places should be suitably screened and separate places provided for male and female workers. (4) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

Drainage: The Contractor shall make sufficient arrangement for draining away the sewerage water as well as water from the bathing and washing places and shall dispose off this waste water in such a way as not to cause nuisance. The Contractor should obtain a permission from the Kerala Pollution Control Board, if water is to be drained in river or near the well. The Contractor would put malarial oil once in a week in stagnant water round about the residence.

Medical facilities: The Contractor shall engage a medical officer with a traveling dispensary for a camp having 500 or more persons if there is no Government or other private dispensary situated within 6 km from the camp.

Conservancy and cleanliness: The Contractor shall provide the necessary staff for effecting the satisfactory conservancy and cleanliness of the camp to the satisfaction of the Engineer-in-charge. At least one sweeper per 200 persons should be engaged. Conservancy staff should dump refuse in compost pit, away from the labour camp.

Health Provisions: The District Health Officer of the District or the Deputy Director of Health Services shall be consulted before opening a labour camp and his instructions on matters, such as the water supply, sanitary convenience, the camp-site, accommodation and food supply shall be followed by the Contractor.

Precautions against epidemic: (a) The authorities in charge of the colonies should get the labourers; inoculated against cholera and plague and Vaccinated against smallpox at the time of recruitment, If they are not inoculated or vaccinated within 6 months or 3 years respectively prior to the date of recruitment. (b) When, in any labour camp there is an epidemic disease or is threatened with such an outbreak, the authorities in charge of the labour camps should ensure that all the inmates of the labour colonies are inoculated or vaccinated as the case may be, depending on the diseases, within 72 hours after the outbreak. (c) The authorities in charge of the labour colony should arrange to communicate by wire regarding the outbreak of the epidemic diseases on the very day of the outbreak, to the District Health officer or to the Deputy Director of Public Health in charge of that area and the Director of Public Health.

Thereafter they should continue to send daily reports to the above officers in the prescribed form regarding the progress of the epidemic disease. (d) When the authorities in charge of the labour colony suspect or have reason to believe that any inmate of the labour colony is suffering from the infectious or contagious disease, they shall forthwith arrange for the segregation of such persons to isolated huts to be specifically provided for the purpose and also for their treatment. (e) As regional malaria epidemic outbreaks are likely to occur in such project areas, the authorities in charge of the labour colonies should report promptly the occurrence of unusual incidence of cases of malaria and also inform the District Health Officers of the District, Deputy Director of Public Health (Malaria) and the Director of Public Health and also arrange to institute all necessary antimalarial measures as may be advised by the officials of the Public Health Department. (f) The authorities in charge of the colonies should also arrange to carry out any other measures that may be recommended by the officials of the Public Health Department necessary to prevent or control the spread of disease.

Clause 59: Gumboots, hand gloves, masks etc. to labourers

Contractor shall have to arrange for the supply of gumboots. Hand gloves, mask etc. invariably to the labourers workers engaged by the Contractor on asphalt work.

Clause 60: No distinction, etc.

The Contractor shall not show any distinction between Harijan and other class of labourers/workers employee to carry out the KaMC work.

Clause 61: Fencing and Lighting

- a) The Contractor shall, unless otherwise specified, be responsible for the proper fencing, lighting grading and taking of the necessary safety measures for all works comprised in the contract and for the proper provision of temporary road, way, foot-way, guards, fences, caution notices, etc. as far as the same may be rendered necessary by reasons of the work for the accommodation of workmen, foot passengers or other traffic and of owners and occupiers of adjacent property and the public and shall remain responsible for any accidents that may occur on account of his failure to take proper & timely precautions.
- b) All the arrangements made for fencing and lighting shall be maintained by the Contractor through the currency of the contract till the physical taking over of the work by department.

Clause 62: Liabilities for accidents to persons

Responsibilities and liabilities of the Contractor under Workmen's Compensation Act are given in Clause No. 43. In addition, following shall also apply:

- (a) On the occurrence of an accident, which results in death of workmen employed by the Contractor or which is so serious as is likely to result in death of any such workmen, the Contractor, shall within 24 hours of happening of such accident(s) intimate, in writing to the Engineer-in-charge the fact of such accident(s). The Contractor shall indemnify KaMC against all loss or damage sustained by the contractor resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or fines, if any, payable by the KaMC as a consequence of contractor's failure to give notice under the Workmen's Compensation Act or otherwise to conform to the provisions of the said act in regard to such accident(s).
- (b) In the case of an accident, in respect of which compensation may become payable under Workmen's Compensation Act, whether by the Contractor or by the KaMC as principal

Employer, it shall be lawful for the Engineer-in-charge to retain out of money due and payable to the Contractor, such sum or sum of money as may, in the opinion of the Engineer-in-charge, be sufficient to meet such a liability. The opinion of the Engineer-in-charge shall be final in regard to all matters arising under this Clause.

Clause 63: Access to site and work on site

The Engineer may, if he considers fit from time to time, enter upon any land(s) which may be in possession of the Contractor for this contract for the purpose of executing any work not included in this contract and may execute such works not included in this contract by agents or by other Contractors, at his opinion and the Contractor shall, in accordance with the requirements of the Engineer-in-charge, afford all reasonable facilities for execution of the work including occupation of lands by structure or otherwise for any other Contractor employed by the KaMC and his workmen or for the workmen of the KaMC who may be employed in the execution on or near the site of the work not included in the contract or of any contract in connection with or ancillary to the work and in default, the Contractor shall be liable to the KaMC for any delay or expense incurred by reason of such default.

Clause 64: Reports regarding labour:

The Contractor shall submit the following reports to the Engineer-in-charge: (i) A daily report in the suitable form of the strength of labour both skilled and unskilled employed by him on the work(s). The Contractor shall increase or decrease the strength both skilled and unskilled, if directed by the Engineer-in-charge. The submission of such reports shall not, however, relieve the Contractor of his responsibilities and duties regarding progress or any other obligations under the contract. (ii) A classified weekly return in the suitable form of the number of person employed on the works during the preceding week (iii) A weekly medical report in the suitable form showing the health of the Contractor's camp, the number of persons ill or incapacitate and the nature of their illness. (iv) A report of any accident, which may have occurred, to be sent within 24 hours of the occurrence, (v) Such other report as may be prescribed.

Clause 65: Treasure Trove:

In the event of discovery by the Contractor or his employees, during the progress of work of any gold, silver, oil or other minerals of any description and precious stones, treasures, coins, antiques, relic, fossils or other articles or value of interest whether geological, archaeological or any other such treasure & other things shall be deemed to be the absolute property of the KaMC and the Contractor shall duly preserve the same to the satisfaction of the Engineer-in-charge from time to time, and relieve the same to such persons as the Engineer-in-charge may appoint. The Contractor shall take all reasonable precautions to prevent his workmen or any other person from removing or damaging, any such articles or things, immediately after the discovery thereof and before removal acquaint the Engineer- in charge with such discovery and carry out his orders for the disposal of the same.

Clause 66: Indemnity:

The Contractor shall indemnify KaMC against all actions, suits, claims & demands through or made against the Department in respect of work of this Contractor against any loss damage to Department in consequence of any action or suit being brought against the Contractor for anything done or omitted to be done in execution of the work of this contract.

Clause 67: Insurance of Labours:

The Contractor shall be responsible to arrange for insurance of all labourers, skilled and unskilled, workers, and supervisors etc., employed by him as per labour regulation of the State.

Clause 68: Setting Out:

The Contractor shall be responsible for the true and proper setting out of the works and the correctness of positions, levels, dimensions and alignments of all parts of the work and for the provisions of all necessary instruments, appliance and labour in connection therewith. If, at any time, during the progress of the work, any errors, appear or arise in the position, levels, dimensions or alignments of any part of the work, the Contractor, on being required to rectify such errors by the Engineer-in-charge shall at his own expense do so to the satisfaction of the Engineer-in-charge.

The checking of and setting out of any line or level by the Engineer-in-charge or his representative shall not in any way, relieve the Contractor of his responsibilities for the correctness of the error. The Contractor shall carefully protect and observe all benchmarks, site-nails, page and other things used in setting out of the work(s).

Clause 69: Cement Register:

Not applicable.

Clause 70: Materials and Works Test Register:

A register in the prescribed form showing day-to-day receipt, consumption and balance of cement on site of work by the Department and every entry thereof shall invariably be signed by the Contractor or his authorised representative in taken of its correctness.

Clause 71: Progress Schedule:

The Contractor shall furnish within one month (unless extended by the Engineer-in-charge) of receipt of work order to start the work, the progress schedule in quadruplicate indicating the date of starting, the monthly progress expected to be achieved and the anticipated completion date of each major item of work to be done by him, also indicating dates of procurement and setting up the materials, plants and machinery. The schedule should include a statement of proposed general and detailed arrangements for carrying out works, and of item, order and manner in which it is proposed general and detailed arrangements for carrying out works and of item, order and manner in which it is proposed that these shall be executed. The schedule should be framed keeping requirement of the Clause 9 of Bid form in view and be such as in practice to the achievement towards completion of the work in the time limit and of the particular items on the dates specified in the contract and shall have the approval of the Engineer-in-charge. Further, the dates for the progress, as in this schedule shall be adhered to.

- a) in case it is found necessary, at any stage to alter the schedule, the Contractor shall submit in, good time a revised schedule incorporating necessary modification proposed and get the same approved from the Engineer-in-charge. No revised schedule shall be operative without such acceptance in writing. The Engineer-in-charge is further empowered to ask for more detailed schedule or schedules, any week by week, for any item and the Contractor shall supply the same as and when asked for.
- b) The Engineer-In-charge shall have, at all times, the right, without in any way vitiating this contract forming grounds for any claim, to alter the order of the work of any part thereof and the Contractor shall after receiving such direction, proceed in the order directed. The Contractor shall also revise the progress, schedules accordingly and submit four copies of the revised

schedule. The Engineer in-charge within seven day; of the said Engineer's to alter the order of works.

- c) The Contractor shall sufficient plant, equipment and labour and shall work such hours and shifts as may be necessary to maintain the progress of the work as per approved progress schedule. The working and shift hours shall comply with all the Govt. regulations in force and shall be such, as may be approved by the Engineer-in-charge and the same not be varied without the prior approval of Engineer-in--charge.
- d) The Contractor shall from time to time, as may be required by the Engineer-in-charge, furnish the Engineer-in-charge with a statement in writing of the arrangements he proposes to adopt for the execution of this contract and the Engineer-in-charge may, if he considers necessary at any time advice alternation in the same, which the Contractor shall adopt on notice thereof.
- e) The progress-schedule(s) shall be in the form of progress chart, forms, statements and/or reports as may be approved by the Engineer-in-charge. The Contractor shall submit four copies showing the progress of the work in the form of a chart etc., at periodical intervals as may be specified by Engineer-in-charge.
- f) The approval of the progress schedules by the Engineer-in-charge shall not relieve the Contractor of schedule required by the Engineer-in -charge shall not entitle the Contractor to any extra payment.

Clause 72: License

Before starting the work, the Contractor will have to obtain the license from the District Assistant Labour Secretary under the Contract Labour (Regulation and Abolition) Act, 1970 after paying necessary fees and deposit on the basis of the number of labourers to be employed on the work and will have to supply two true copies of the said license to the Deputy Executive Engineer before the work is started.

SECTION V: TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS

Scope of Work

1) Scope of Work (Twelve months)

The broad scope of work to be carried out by the selected contractor includes following component but not limited to levelling, compaction and reformation of waste slopes at [site], which primarily include revising the capacity of the landfill by engineering the site slopes to provide planned slope ratio, Providing the cover layer over the final finished profile of the landfill (i.e., on the top and side slopes). The cover layer for the landfill is to be designed to achieve maximum recovery of landfill gas and minimise loss to the environment. The cover system proposed for the project is composite type and comprises of following layers from top to bottom. The dumpsite is to be then closed by placement of a top cover which consists of the following:

- a) Supply & installation of **Geo-synthetic clay liner** as per given specifications, complete to form an impervious barrier.
- b) Supply & installation of **1.5mm Thick HDPE Smooth Geo-membrane Liner** as per given specifications, complete to form an impervious barrier as shown in drawings.
- c) Supply & install **Geo-synthetic drainage nets (Geo-nets)** of appropriate specification and make, laying anchoring in trench, overlapping, testing complete as given in General Specification and as shown in the drawings. Geo-nets must be anchored within anchor trench including related anchoring work etc. complete. Rate to include the necessary lap at joints, wastage, testing, etc. complete. Measurement will be made as per finished area. Geo-net in the anchor trench will be taken in measurement.
- d) Supply & installation of **Non-woven Geotextile (GT)** of appropriate specification and make, as per details given in Specifications, spreading on the sand layer or Geo-membrane as per the directions given by the Engineer-in-charge, without damaging the Geotextile or Geo-membrane. The Geotextile must be placed along the slope from top to bottom with an overlap of minimum 100mm. It should be stitched with HDPE thread. Geotextile must be anchored within anchor trench including excavation of trench and backfilling, compaction complete, at top and bottom portion. Rate to include the necessary lap for jointing, stitching, wastage complete. Measurement will be made as per finished surface area. Geotextile in the anchor trench will be taken in measurement.
- e) **Drilling 500mm Dia** bore for the Gas well including required machinery, tripod and related all machinery with all lead and lifts. Disposing bored material
- f) **Vegetative soil layer:** The top layer should be 60 cm thick vegetative soil laid on well gravel.
- g) **Surface and Peripheral drain**
- h) **Access steps**

A surface water management system is to be developed, comprising a surface water peripheral drain (collecting runoff from the top cover), a de-silting chamber and an appropriate leachate collection network and leachate sump system (for potential wet weather flows). An appropriate leachate transportation system is to be proposed after considering the existing impact of leachate on ground water in the vicinity. A report on water quality and the hydrology of the vicinity of the site is to be developed.

It is recommended that final slopes should not exceed 1:2 to 1:3 and should be so designed to avoid ponding on the top cover by maintaining a gradient in excess of 4%. Said works should comply with all the legislations and statutes including SWM Rules 2016 and amendments thereof.

The Contractor shall carry out total station contour survey (0.5 meter contour interval), block levels of 5 meters or less, during the construction period initial stage (as is basis) prior to starting site work, post waste movement, compaction of each layer, post closure of dumpsite. In all cases, the total quantum of waste removed to be measured and submitted for scrutiny. The As-build drawing shall be provided by the contractor indicating the final capping area with levels plotted, drainage, coarse lined/unlined, roads, structures, building, electrical, compound wall etc.

1.1 Air Quality, Water Quality and Noise Monitoring at dumpsite

- To carry out the ambient air quality monitoring parameters like Suspended Particulate Matter, RSPM, Methane, Carbon Monoxide, Carbon di-oxide, Nitrogen oxides, Sulphur dioxide.
- These data need to be collected quarterly from commencement to end of the work.
- The first collection of data on these parameters or any additional parameters, as finalised in consultation with Kerala Pollution Control Board (KPCB), vetted by KPCB laboratory or its accredited laboratory, as the first activity during the Pre - Closure Phase, will form the Base line.
- To carry out the water quality (surface and ground water), noise levels, soil characteristics before commencement of work of the Pre - Closure Phase. Ground water quality is to be assessed in either existing or established test bore-wells upstream and downstream of the site. This base line data needs to be established in consultation with Kerala Pollution Control Board, vetted by KPCB laboratory or its accredited laboratory. A report on the hydrology of the site is to be developed and findings are to be considered during the design of the landfill cover and required infrastructure.
- Post closure monitoring is to be performed semi-annually for two years, for ambient air quality and water quality parameters listed above and as directed by KPCB.

2) Final Cover/ Capping of Old Dump Site

After completion of landfill, a final cover as per SWM Rules 2016 is to be designed to minimize infiltration and erosion. The final cover shall meet the following specifications, namely;

- a) The final cover shall have a Geo-Synthetic Clay liner (GCL) consisting of Bentonite (sodium montmorillonite) sandwiched between geotextiles with permeability coefficient less than 1×10^{-7} cm/sec.
- b) On top of the barrier GCL, there shall be a drainage layer of 15 cm.
- c) On top of the drainage layer, there shall be a vegetative layer of 60 cm to support natural plant growth and to minimize erosion.

2.1 Geo-synthetic Clay Liner (GCL):

Since the site at Chelora is old and characteristics indicate more inert and less organic the GCL is proposed. Geo-synthetic Clay Liners (GCLs) are proposed as a barrier layer in the top cover. It acts as a standalone barrier to protect the adjoining environment from any liquid leakages.

There are two general categories of GCLs covered in this specification: reinforced and non-reinforced. Six tests are required on the as manufactured GCL with one having an alternative, i.e., hydraulic conductivity or flux. All are minimum values, with the exception of fluid loss, moisture content and hydraulic conductivity or flux.

Property	ASTM Test Method	Reinforced GCL			Non Reinforced GCL			Testing Frequency
		GT Related	GT Polymer Coated	GM_GF Related	GT Related	GT Polymer Coated	GM_GF Related	
GCL (as manufactured)								
Mass of GCL (g/m ²)	D5993	4000	4050	4100	4000	4050	4100	4000 m ²
Mass of Bentonite (g/m ²)	D5993	3700	3700	3700	3700	3700	3700	4000 m ²
Moisture content %	D6768	-4	-4	-4	-4	-4	-4	4000 m ²
Tensile str., MD(kN/m)	D6496	4	4	4	4	4	4	20000 m ²
Peel strength (N/m)	D5887	360	360	360	n/a	n/a	n/a	4000 m ²
Permeability ⁽¹⁾	D5887	5×10^{-11}	5×10^{-12}	5×10^{-12}	5×10^{-11}	5×10^{-12}	5×10^{-12}	25000 m ²
(m/sec), "or"								
Flux ⁽¹⁾ (m ³ /sec-m ²)	D5993	1×10^{-8}	1×10^{-9}	1×10^{-9}	1×10^{-8}	1×10^{-9}	1×10^{-9}	25000 m ²
GCL permeability ⁽¹⁾	D6766	1×10^{-8}	1×10^{-9}	1×10^{-9}	1×10^{-8}	1×10^{-9}	1×10^{-9}	Yearly
GCL permeability ⁽¹⁾	D6766 m	5×10^{-11}	5×10^{-12}	5×10^{-12}	5×10^{-11}	5×10^{-12}	5×10^{-12}	Yearly
Component Durability								
Geotextile and reinforcing yarns % strength retained	-10	65	65	n/a	65	65	n/a	Yearly

n/a= not applicable with respect to this property

MD = Machine Direction, X MD = Cross Machine Direction.

- 1) These values are maximum (all others are minimum)
- 2) For both cap and carrier fabrics for nonwoven reinforced GCLs; one, or the other, must contain a scrim component of mass ≥ 100 g/m² for dimensional stability
- 3) Calculated value obtained from difference of coated fabric to as-received fabric
- 4) Value is both site-specific and product-specific and is currently being evaluated
- 5) First value is for smooth geo-membrane; second for textured geo-membrane; third for geo-film
- 6) Mass of the GCL and Bentonite is measured after oven drying per the stated test method
- 7) Value represents GCL permeability after permeation with a 0.1 M calcium chloride solution (11.1 g CaCl₂ in 1-liter water)
- 8) Value represents the minimum percent strength retained from the as-manufactured value after oven aging at 60°C for 50 days
- 9) The geotextiles in their as-received condition are evaluated by incubation in a forced air oven per ASTM D5721 set at 60°C for 50 days. The minimum percent in tensile strength retained at break, as measured by ASTM D6768, is 65%. If individual yarns are used in reinforcing GCLs, they must also meet this same endurance criterion.

- 10) The geo-film in its as-received condition is evaluated by incubation in a forced air oven per ASTM D5721 set at 60°C for 50 days. The minimum percent tensile strength retained at break for either MD or XMD, as measured by ASTM D882, is reported accordingly and must meet or exceed the specification value.

2.2 High Density Polyethylene (HDPE) Smooth Geo-membrane

A High Density Polyethylene liner of 1.5mm thickness will be placed above the GCL and to act as an impervious layer. Together they will minimize the percolation of water. Proper installation procedures shall be employed during HDPE liner construction

Material Properties/Specifications

Sl. No	Property	Specification	Unit	Test Method	Frequency
1	Thickness, microns	1.5	mm	ASTM D 5199	Every Roll
2	Resin Density	>0.932	g/cc	ASTM D-1505	1/Batch
3	Melt Density-190/2.16 (max)	1	g/10 Min	ASTM D-1238	1/Batch
4	Sheet Density	>0.94	g/cc	ASTM D-792	Every 2 rolls
5	Carbon Black Content	>2.0/<3.0	%	ASTM D-4218	Every 2 rolls
6	Carbon Black Dispersion	Cat.1/Cat.2	Category	ASTM D-5596	Every 2 rolls
7	Oxidation Induction Time (Min Ave)	100	Min	ASTM D-3895	1/Batch
8	Tensile Properties ¹			ASTM D 6693	Every 2 Rolls
9	Yield Strength	23	KN/m		
10	Break Strength	43	KN/m		
11	Yield Elongation	13	%		
12	Break Elongation	700	%		
13	Tear Resistance	200	N	ASTM D 1004	Every 4 rolls
14	Puncture Resistance	540	N	ASTM D 4833	Every 4 rolls
15	Dimensional Stability	+/- 2	%	ASTM D-1204	Per Formulation
16	Stress Crack Resistance ²	400	Hr	ASTM D 5397 (App.)	1/Batch
17	Carbon Black Content ³	2.0 - 3.0		ASTM D 1603	2.0 - 3.0
18	Oven Aging -% retained after 90 Days	80	%	ASTM D 5721	Per Formulation
19	UV Resistance -% retained after 1600 Hr	50	%	GRI GM11	Per Formulation
20	High Pressure OIT ⁶ (% retained after 1600 hrs)	50	%	ASTM D 5885	Per Formulation

REFERENCE STANDARDS: AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

1. ASTM D638 – Standard Test Method for Tensile Properties of Plastics
2. ASTM D 746 – Standard test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
3. ASTM D 751 – Standard Test Method for Testing Coated fabrics
4. ASTM D 792 – Standard Test Method for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
5. ASTM D 1004 – Standard Test Method for Initial Tear Resistance of Plastics Film & Sheeting.
6. ASTM D 1204 – Standard Test Method for Linear Dimensional Changes of Non-rigid Thermoplastic Sheeting or Film at Elevated Temperature.
7. ASTM D 1238 – Standard Test Method for flow rates of Thermoplastics by extrusion plastometer.
8. ASTM D 1505 – Standard Test Method for Density of Plastics by the Density Gradient technique.
9. ASTM D 1603 – Standard Test Method for Carbon Black in Olefin Plastics.
10. ASTM D – Standard Test Method for Environmental Stress – Cracking of Ethylene Plastics.
11. ASTM D 3015 – Standard Practice for Microscopical Examination of pigment Dispersion in Plastic Compounds.
12. ASTM D 3895 – Standard Test Method for Copper Induced Oxidative Time of Polyolefin's by Thermal Analysis.
13. ASTM D 4437 – Standard Practice for determining the Integrity of field seams used in joining Flexible Polymeric sheet Geo-membrane.

2.3 Geonet- Drainage Media

A Geonet of 5mm thickness shall be placed over the HDPE liner to act as drainage media. The Geonet shall be used instead of a layer of gravel which is typically used in capping systems. Placing gravel on a smooth liner at 1:3 slopes may cause it to become unstable and slip. To avoid this, a Geonet is recommended. The Geonet will serve the same purpose as a gravel layer of minimizing infiltration by providing a preferred pathway for surface water to drain over the impervious cap liner layers. The drainage net shall be manufactured by extruding two sets of Polyethylene strands to form a three dimensional structure to provide planar flow of fluids. The drainage net shall contain UV inhibitors to prevent ultraviolet light degradation.

Material Properties/Specifications

Sl. No.	Property	Specification	Units	Test Method
1	Thickness	5	mm	ASTM D 5199/ISO 9863-1
2	Mass per Unit Area	790	g/m ²	ASTM D 5261
3	Density	0.940	g/cc	ASTM D 1505
4	Melt Index	1.0	g/10min	ASTM D 1238
5	Carbon Black Content	2	%	ASTM D 1603
6	Tensile Strength (MD)	7.9	KN/m	ASTM D 1682 or ASTM D 5053
7	Transitivity (MD) Metal plate/net/metal plate Hydraulic gradient I=1 Normal pressure = 15000 psf (718 Kpa)	1 X 10 ⁻³	m ³ /sec-m	ASTM D 4716

2.4 Geo-Textile

A Geotextile of 350 gsm shall be placed over the Geonet and used as separation layer between the overlying soil and the Geonet. The Geotextile will prevent the soil from clogging the Geonet and hence enhance drainage.

The geotextile fabric shall be a polypropylene nonwoven needle punched fabric consisting of continuous filaments or multifilament yarns formed into a stable network. The fabric shall be non-biodegradable, non-reactive within a pH range of three to eleven, resistant to ultraviolet light exposure and shall conform to the minimum average roll values for the following properties.

Material Properties/Specifications

Properties	Class	Unit	Test Standard
Mass/Unit Area	350	g/m ²	ISO 09864
Tensile Properties			
• Strength	16	KN/m %	ISO 10319
• Strain at Maximum Load	50		
Trapezoidal tear Strength	0.42	KN	ISO 13937
CBR Puncture			
• Max Force	3.1	KN mm	ISO 12236
• Elongation at Max Force	38		
UV Resistance	70	%	ISO 12959 or EN 12224

2.5 Gas venting Pipe

Providing, lowering, laying in trenches, aligning, fixing in position and jointing socketed rubber gasket type ISI marked uPVC pipes of Class III (6 Kg/sqcm) suitable for potable water with rubber ring joints (as per IS 4985-2000) of following outer dia with all accessories (excluding specials) complete including all material, labour, hydraulic testing and commissioning as per Technical Specifications and as per direction of Engineer. *The pipe shall be embedded within 300 mm thick drainage layer of granular material of permeability 1x10⁻² cm/sec.*

2.6 Green cover & Landscaping

The development of vegetation growth to cover the open areas of the landfill site also reduces odour. Good plantation cover forms a surface capable of absorbing and forming sinks for odorous gases. Leaves, with their large combined areas in a tree crown, sorbs pollutants on their surface, thus effectively reduce odorous compound concentrations in area emissions of MSW landfill site.

The criteria for plantation at closure dump site: A vegetative cover shall be provided over the completed site in accordance with the following specifications, namely:

- (a) Locally adopted non-edible perennial plants that are resistant to drought and extreme temperatures shall be planted.
- (b) The selection of plants should be of such variety that their roots do not penetrate more than 30 cms. This condition shall apply till the landfill is stabilized;
- (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 minimise soil erosion.
- (e) Green belts shall be developed all around the boundary of the landfill in consultation with State Pollution Control Boards or Pollution Control Committees.

Bermuda turf grass may be used for the vegetation layer over the capped area.

Note: For local species, the contractor shall consult the Department of Horticulture, on the lines as specified by CPCB given below; An important aspect of a green belt sometimes overlooked is that the plants constituting green belts are living organisms with limits to their tolerance towards air pollutants. A green belt is effective as pollution sink only within the tolerance limits of constituent plants. The philosophy is that when primary pollutants are taken care of, formation of secondary pollutants will not reach menacing proportions. Primary pollutants of concern are – SO₂, HF, NO₂, CO, CO₂, NH₃, H₂S, Cl, SPM and organics.

3) Environmental Management Plan

In order to ensure the optimal performance of the Closure site, it is important to check the environmental pollution and comply with the regulatory requirements, the following environmental parameters shall be monitored on a regular basis.

- Surface & Ground Water Quality
- Ambient Air Quality

The above parameters shall be monitored as per the standards stipulated in SWM Rules 2016. The frequency of sampling and location for monitoring are given below.

Components of Environmental Monitoring

Sl. No.	Description	Frequency
1	Quality of Water in wells within site	Once in 3 months
2	Ground Water Quality – Outside the Site	Once in 3 months
3	Air Quality	Once in 3 months

The monitoring shall meet the standards recommended by MoEF in SWM Rules 2016.

The samples shall be collected as per the sampling plan and monitored as per the standards stipulated in SWM Rules 2016.

Sampling Specifications for Environmental Monitoring

Description	Sampling Specifications
Surface Water Quality	One grab sample each at up-stream side and down-stream of treated leachate out fall into River once in three months. Summer, pre-monsoon and post monsoon.
Ground Waste Quality	One sample each from the monitoring well on upstream side and down-stream side of the landfill site once in three months. Summer, pre-monsoon and post monsoon.
Ambient Air Quality	24 hours continuous ambient air quality monitoring at one location in upwind and three locations in downwind directions twice a year.

Table 1: Surface Water Quality Parameters

Sl. No	Test Parameters	Unit	SW1	IS: 2296: Class 'C' Water
1	Colour	Hazen	<5	300
2	pH value	-	7.25	6.5-8.5
3	Total Dissolved Solids	mg/L	340	1500
4	Total Hardness	mg/L	128	N.S
5	Total Suspended Solids	mg/L	4	N.S
6	Chloride (as Cl-)	mg/L	40	600
7	Sulphate as (SO ₄ ²⁻)	mg/L	32	400
8	Oil & Grease	mg/L	N.D	N.S

Sl. No	Test Parameters	Unit	SW1	IS: 2296: Class 'C' Water
9	Sodium (as Na)	mg/L	10	N.S
10	Potassium (as K)	mg/L	3	N.S
11	DO	mg/L	1.8	4
12	BOD at 27oC	mg/L	4	3
13	COD	mg/L	20	N.S
14	Iron as Fe	mg/L	0.11	50
15	Lead (as Pb)	mg/L	N.D	0.1
16	Arsenic (as As)	mg/L	N.D	0.2
17	Chromium (as Cr)	mg/L	N.D	N.S
18	Cadmium (as Cd)	mg/L	N.D	N.S
19	T. Coliform	MPN/100ml	43	5000
20	Faecal coliform	MPN/100ml	11	N.S

Table 2: Ground Water Parameters

Sl. 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

Table 3: Air Quality Parameters

Sl. No	Parameters	Acceptable Limits
1	Sulphur dioxide	120 µ g/m ³ (24 hrs)
2	Suspended Particulate Matter	500 µ g/m ³ (24 hrs)
3	Methane	Not to exceed 25 per cent of the lower explosive limit (equivalent to 650 mg/m ³)

6) Health of Staff and Labour

The filthy Working condition/environment at the old garbage dump site may possess harmful contaminants, all the workers shall be provided with the personnel protective equipment like masks, gloves, goggles, protective caps, gum boots, uniform, etc. The care shall be taken by providing oxygen cylinders, first aid facilities at the site at all times.

Mitigation of immediate health and safety hazards, such as hazardous substance vapor exposures in enclosed spaces where people work and/or live, contaminated drinking water supplies, imminent hazardous substance release to surface water, etc.

Education and specialized training certificates (including health and safety) of personnel likely to be assigned to work on landfill remediation projects (for both onsite and project management personnel). Contractor shall provide equipment and monitor the work place to protect workers from safety and health hazards.

All necessary precautions shall be taken by the Contractor to ensure the health and safety of staff and labour engaged at the site for the execution of the project as well as during the Post Closure Operation & Maintenance. The Contractor shall, in collaboration with and to the requirements of the local health authorities, ensure that medical staff, first aid facilities, sickbay and ambulance service are available on the Project Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The Contractor shall maintain records and make reports concerning health, safety and welfare of personnel, and damage to property, in such manner as the Engineer may reasonably require. Safety Precautions and Emergencies and Protection of Environment

Responsibility for Safety:

The Contractor shall be solely responsible notwithstanding any stipulations by owner or Engineer for initiating, maintaining and supervising all safety precautions and programmes, in connection with the work and shall comply with all laws, ordinance, code rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damages, injury or loss during the entire contract period including non-working hours. On the occurrence of an accident arising out of the works which result in death or which is so serious as to be likely to result in death, the Contractor shall within one hour of such accident intimate in writing to the Engineer the facts stating clearly and with sufficient details the circumstances of such accidents and subsequent action taken by him. The matter should also to be reported to the local police station immediately. All other accidents on the works involving injuries to the persons or property other than that of the Contractor shall be promptly reported to the Engineer clearly and with sufficient details the facts of such accidents and the action taken by the Contractor. The Contractor shall submit the following within 15 days of receipt of Work Order and get approved from Engineer. Failing to do so, a fine of Rs. 5000/- (Rupees Five Thousand) per day shall be imposed on the Contractor.

Safety Measures:

The Contractor shall, throughout the execution and completion of the works and the remedying of any defects therein:

- a) Have full regard for the safety of all persons entitled to be upon the site and keep the site (so far as the same is under his control) and the works (so far as the same are not completed or occupied by the Employer) in an orderly state appropriate to the avoidance of danger to such persons.
- b) Provide barricading for the work site as per the drawings and specifications provided in Volume II. Provide and maintain at this own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer or by any duly constituted authority, for the protection of the works or for the safety and convenience of the public or others, and

- c) Take all reasonable steps to protect the environment on and off the site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.
- d) The Contractor shall appoint a safety engineer to be responsible for the safety of personnel on the Project Site. This safety engineer shall be qualified for his work and shall have the authority to issue instructions concerning safety and take protective measures to prevent accidents.

7) Schedule for Various Milestone

Milestones required to be achieved within the given timeframe are as follows:

- Closure Plan: The dumpsite closure plan must be accompanied by detailed drawings and site plans for the intended closure and capping of the dumpsite as well as landscaping plans for the vegetative layer to be developed over the capped dumpsite. The dumpsite closure and management plan shall provide a time schedule for the completion of all the works specified for closure phase. Drawings should include design drawings indicating proposed movement of waste, compaction and potential partial land reclamation. Design drawings for an appropriate leachate collection and treatment system and a storm water management system should also be provided.

8) Environmental Standards

Contractor has to follow the Environmental Standards as mentioned below

- 1) Air Quality Monitoring: As per Solid Waste Management Rules 2016 (SWM Rules 2016) or amendments thereafter with respect to baseline site parameters.
- 2) Noise Monitoring – As per Noise Pollution Rules 2000 or amendments thereafter with respect to baseline site parameters.
- 3) Leachate Treatment – As per Solid Waste Management Rules 2016 (SWM Rules 2016) or amendments thereafter with respect to baseline site parameters.
- 4) Odour Monitoring – As per CPCB guidelines ‘Odour Pollution & Its Control May 2008’ or amendments thereafter with respect to baseline site parameters.
- 5) Water Quality Monitoring - As per Solid Waste Management Rules 2016 (SWM Rules 2016) or amendments thereafter with respect to baseline site parameters.
- 6) Contractor has to make all the necessary arrangement for monitoring of environmental standards to meet the SPCB conditions.
- 7) Contractor may appoint a professional agency approved by MoEF/NABET for carrying out the monitoring.

After completion of closure of the landfill, the contractor has to landscape and maintain the site in good condition and remove all equipment and machinery used for closure of the landfill site.

Performance security of the contractor will be released only after the entire project site has been handed over to KaMC without encumbrances unless it is decided to buyback the plant and machinery at a mutually agreed value.

If the plant and machinery are not removed within the stipulated period, the same shall be removed and disposed of, by KaMC.

9) Special conditions

There will be no lease of land to the contractor. Such right of entry however will be restricted to the plant and machinery set up by the contractor and will under no circumstances be extended to the land. As specified above, there will be no lease of land to the contractor and hence the question of creation of encumbrances on the land does not arise.

The bidders should familiarize themselves with the site conditions, and also carry out necessary site visits, surveys, studies / testing, analysis of the existing Solid Waste with due diligence at their own cost prior to the bidding. Bidders will be allowed to take bores at site to ascertain density at different levels and to carry out analysis of strata. All the data/information/maps provided in the tender are indicative only. Contractor shall not bring any dispute regarding any data provided in the tender, variation in quantity and characteristics of Solid Waste as he is expected to do his own studies.

- 1) Documentary evidence shall be provided for technical evaluation and all documents & technical proposal submitted shall be part of contract. The same plan shall be adhered for implementation. No change in the plan is allowed without the approval of KaMC.
- 2) All the designs and equipment submitted in technical proposal should be reflected in the financial proposal. If any discrepancy is observed in the financial proposal with rate analysis and is not justified satisfactorily by the bidder, the bid shall be rejected.
- 3) KSIDC shall be absolved from any litigation which may arise subsequently due to violation of the contract and any applicable norms/rules.

Methodology for handling existing site at Chelora

Management of the project and methodology required to be adopted for handling existing solid waste at Chelora shall include the following

- 1) The contractor should ensure regulated and continuous capping of waste from dump site with utmost safety and under standard hygienic conditions.
- 2) The waste removed from the dump sites is to be safely transferred to the required area within the site. The contractor will prepare a layout clearly showing the storage area required for capping of the garbage along with allied activities.
- 3) The capping area should be provided with necessary infrastructure like security and access control/s, camera monitoring and recording features etc by the contractor.
- 4) A separate first aid facility will be provided at the Chelora dumping site within 100 m of the treatment facility.
- 5) Contractor may plan to work in three shifts
- 6) The hardware and technology adopted may include but not limited to the following:
 - Deploying of all requisite inputs viz., Solid Waste collection & handling equipment and vehicles, JCB, dumpers etc. will be contractor's responsibility.
 - The plant and machineries necessary for each of the above steps will be part of the proposal submitted to KSIDC for approval.
 - The plan proposed should be comprehensive in terms of providing a source to end solution.

Submissions of plan and methodology for the project

Bidders will submit the following documents along with the technical bid as per Form 9.

- 1) Detailed approach & methodology including work plan and methodology including monsoon period for closure and post closure period.
- 2) All relevant plans/design drawings as specified in this section

The approach & methodology including work plan should also include a section on design & engineering including BOQ. The successful bidder will be required to further refine the proposed approach and methodology including design and engineering before starting implementation on approval of KaMC.

Mobilization & Construction period and commencement of the project

Scientific Closure of the dumpsite should be accomplished within Twelve months from the receipt of LOA/work order.

Contract Period

Contract period will be 12 months for construction including monsoon period from the date of LOA/Work Order.

Monsoon Period

Additional care to be taken during the monsoon period (15th June to 15th September) to avoid leachates and odour problem by covering the garbage appropriately. Plan needs to be submitted and adhered to the plan.

SECTION VI: DRAWINGS